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GUIDELINES FOR EXPORT SLAUGHTERHOUSES

***One of a series of
Marketing and Meat Trade
Technical Bulletins***

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GUIDELINES FOR EXPORT SLAUGHTERHOUSES

*This bulletin will assist those involved
in the construction or modification of
a slaughterhouse where it is intended to
apply for inclusion on the list of premises
approved for intra-Community trading in fresh meat.*

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INTRODUCTION

This bulletin has been prepared to assist those involved in the construction or modification of a slaughterhouse where it is intended to apply for inclusion on the list of premises approved for intra-community trade in fresh meat. Although no attempt has been made to write a comprehensive text-book on the design and construction of slaughterhouses it has been found expedient in most sections to extend the discussions beyond a mere reference in order to meet the particular needs of the export requirements. Attention is paid to the more general problems of economical construction, efficient layout and separation, and the maintenance of a high degree of hygiene.

Few of the requirements which control the construction and operation of slaughterhouses, either for home trade or for intra-community trade, are very specific. In practice, even more important than the word of the regulations is the interpretation placed on them at any given moment of time by the appropriate authority.

To give but one example of the importance of interpretation, reference may be made to Regulation 22 of the 1958 Slaughterhouses (Hygiene) Regulations which states that *'The occupier of every slaughterhouse shall keep it or cause it to be kept in such a state of cleanliness and otherwise so conduct it as to prevent the risk of contamination of any meat therein ...'*.

It can be agreed that, by 1974 standards, the simultaneous slaughter of cattle and pigs in the same area presents a risk of contamination to such an extent as to make it unacceptable. The EEC Directive demanding either a separate section for slaughtering pigs, or adequate separation of the two lines if slaughtering takes place at different times (Clause 1.b states *'.... in slaughtering premises where both pigs and other species of animal are slaughtered, a special section must be provided for slaughtering pigs ...'*) may be reasonably agreed as going no further than the terms of our own United Kingdom Regulations.

The United Kingdom Regulations are therefore in most ways, just as comprehensive as those set by the relevant EEC Directive. The former are interpreted and enforced at local level by the appropriate Public Health Authority although advice from the Ministry of Agriculture, Fisheries and Food is available to them. The EEC Directive is interpreted solely by the Ministry of Agriculture, Fisheries and Food. Inclusion on the list of approved Export Slaughterhouses in England and Wales is granted by the Animal Health Division IV of the Ministry of Agriculture, while in Scotland this responsibility rests with the Scottish Department of Agriculture and Fisheries. It must be emphasised that to be included on the list there must be an on-site inspection of the completed premises when the standard of hygiene as well as construction can be assessed by a veterinary officer of the appropriate Department. This is followed by regular check visits,

and means that inclusion on the export list can never be guaranteed to any operator on the basis of mere examinations of plans or specifications, nor continued inclusion ensured if premises, working practices or management deteriorate.

The guidelines in this bulletin are directed mainly towards new slaughterhouses. Their application to the redesign of existing premises requires care if the recommendations need to be modified to suit site peculiarities.

Designs prepared for operators by the Meat Plant Advisory Service of the MLC (which is concerned with efficient operation as well as meeting the terms of the Regulations) are forwarded for comment to the relevant Government Departments with whom full liaison is maintained. This procedure should also be followed, before building work commences, by whoever else prepares plans for a new slaughterhouse or the modification of existing premises. It is further recommended that the MLC should be consulted from the point of view of efficient operation.

This bulletin, which was prepared by Charles Smith of the Meat Plant Advisory Service under the direction of its Head, Brian Holt, has been discussed at all stages of drafting with the members of the Working Party on the EEC Directive of Trade in Fresh Meat to whom grateful acknowledgement is made for their experienced and helpful contribution. This Working Party, which consists of representatives of the relevant Government Departments, the abattoir operators and the Meat and Livestock Commission, is fully in agreement with its contents. However, although advice is given in good faith, neither the MLC nor its staff accept any liability therefore or any claim in respect thereof, whether arising from negligence or otherwise.

The current document should be considered a first edition which can, in due course, be improved, extended and up-dated; the readers are invited to inform the MLC's Meat Plant Advisory Service of their views on the contents of the Bulletin and its improvement.

REGULATIONS

England and Wales

- (a) Food and Drugs Act 1955
- (i) The Slaughterhouses (Hygiene) Regulations 1958 No. 2168, and amendments 1959 No. 1543, 1962 No. 1287, and 1966 No. 1318.
 - (ii) The Meat Inspection Regulations 1963 No. 1229, amended 1966 No. 915.
 - (iii) The Meat (Sterilization) Regulations 1969 No. 871.
- (b) The Slaughterhouses Act 1958
- (i) The Slaughter of Animals (Prevention of Cruelty) Regulations 1958 No. 2166.

Scotland

- Slaughter of Animals (Scotland) Act 1928 (Ch. 29)
- (i) Slaughter of Animals (Prevention of Cruelty) (Scotland) Regulations 1955 No. 1993 (S151).
 - (ii) Food (Meat Inspection) (Scotland) Regulations 1961 No. 243 (S15).
 - (iii) Food (Meat Inspection) (Scotland) Amendment Regulations 1963 No. 1231 (S52).
 - (iv) Slaughter of Animals (Stunning Pens) (Scotland) Regulations 1963 No. 1888 (S100).
 - (v) Food (Preparation and Distribution of Meat) (Scotland) Regulations 1963 (S108).

European Economic Community

Directive of the Council of 26th June 1964 on health problems concerning intra-community trade in fresh meat. (64/433/EEC) (as amended by 66/601; 69/349 and 70/486).

Note. Throughout this bulletin the relevant EEC Conditions are stated at the commencement of each section. A full comparison with the England and Wales and the Scotland Regulations is set out in the Appendix.

I. THE SITE

EXTRACTS FROM RELEVANT EEC CONDITIONS

EEC DIRECTIVE ANNEX I, CHAPTER I - Conditions for the Approval of Slaughterhouses require:

- 1 (k) *Means of checking access to and from the slaughterhouse.*
- 1 (l) *An adequate separation between the clean and polluted section.*
- 1 (p) *An installation which enables drinking water exclusively provided under pressure and in adequate quantities, however, the use of water other than drinking water is authorised exceptionally for the production of steam..... and for the cooling of refrigeration equipment.....*
- 1 (x) *A special section for manure.*
- 1 (y) *Space and arrangements for cleaning and disinfecting vehicles.*

SITE SELECTION

Ideal Site Requirements

The chosen site must have means of maximum separation of livestock and by-products areas and vehicles from fresh meat areas and vehicles.

It should be of sufficient size for all foreseeable expansion.

All main services, including efficient sewerage, should be adjacent to the site.

Access to trunk roads and motorways, which avoid traffic congestion and built-up areas, is desirable.

A site should be found free from restriction on size and type of buildings. It should avoid areas designated for town and industrial development and be provided with a varied source of labour within easy travelling distance.

Preference should be given to land which is unsuitable for farming but made up ground or areas liable to flooding should be avoided. Land which is subject to hazards from industrial pollution, or near works likely to increase vermin, should also be avoided. In this connection chemical drift from crop spraying could be as hazardous as toxic waste emitted by industry.

Trees and natural landscape features, should be retained where possible, as these can shield or enhance the buildings.

A flat site is not essential. Use can be made of slopes to provide loading banks or sub-basement by-products rooms.

Consideration of Location

Possible sites exist in urban and rural areas and on Nominated Industrial Sites. The advantages and disadvantages of these are summarised as follows:

Urban sites

Advantages:-

- (a) Mains water and electrical power.
- (b) Mains sewerage (see below).
- (c) Proximity to public transport.
- (d) Large labour resources.
- (e) Proximity to wholesale and retail outlets.

Disadvantages:-

- (f) Mains sewerage frequently overloaded.
- (g) Restriction on site size, leading to expansion difficulties.
- (h) Difficult to separate 'clean and dirty', particularly access points.
- (j) Severe problems of traffic congestion.
- (k) Severe planning restrictions on type of building.
- (l) Restrictions on hours of working.
- (m) Objections to noise and odours of stock and vehicles when near housing estates.

Nominated Industrial Sites

Advantages:-

- (a) Mains services available.
- (b) Possible to separate 'clean and dirty' areas.
- (c) Usually possible to arrange separate access points.
- (d) Adequate and varied labour resources.
- (e) Public transport available.
- (f) Free from town development.
- (g) Local and National inducements sometimes offered.

Disadvantages:-

- (h) Seldom easy to expand due to pre-determined boundaries.
- (j) Not always free from restriction on building type or size.
- (k) Possible pollution hazard from other industries.
- (l) Subject to competition for labour.
- (m) Subject to land competition from other industries.
- (n) Possible complaints about stock noise and smells.
- (o) Inevitable increase in traffic congestion.
- (p) Generally subject to leasehold conditions.

Rural sites

Advantages:-

- (a) Usually capable of expansion.
- (b) Separate 'clean and dirty' access easier to arrange.
- (c) Easy to obtain maximum separation.
- (d) Away from traffic congestion and can be adjacent to motorways.
- (e) Less restriction on building type and size.
- (f) Less restriction on working hours.
- (g) Free from town developments.
- (h) Easier to retain labour.
- (j) Generally free from pollution (but see (o) below).
- (k) Improved availability of stock.

Disadvantages:-

- (l) Main services not always available or adequate.
- (m) Adequate and varied labour may not be available.
- (n) Public transport infrequent, and at wrong times.
- (o) Possibility of chemical drift from crop spraying.
- (p) Possibility of cross contamination from infected stock. (Site must be enclosed by a stock proof fence).

Summary

Urban sites should clearly be avoided because the disadvantages so outweigh the advantages. It should further be appreciated that future town planning may make continuity of tenure doubtful. Nominated Industrial Sites are marginally better than urban sites but the major disadvantage is the competition for land for slaughterhouse expansion from adjoining industries. Many slaughterhouses built on these sites in recent years are now unable to expand.

Although truly rural sites appear to offer the best conditions they will usually suffer from one or two of the disadvantages tabulated.

The conclusion to be drawn is that a slaughterhouse should be sited on its own, away from housing and industrial development, outside the present and projected boundaries of a town, but close enough to be served by a trunk road and public transport. If it is immediately adjacent to farm land it must be bounded by a stock-proof fence and have separate access to a main road.

SERVICES TO THE SITE

Water

The three terms 'Drinking Water', 'Potable Water' or 'Wholesome Water' referred to in the various regulations all indicate the one quality which may be used, i.e. water fit to drink. In the United Kingdom all mains water will meet these requirements.

The Local Public Health Department, and the Ministry of Agriculture, Fisheries and Food (or the Department of Agriculture and Fisheries for Scotland) must be consulted before water from other sources, such as wells or bore holes, is used. It should either be raised to the quality of potable water or used only for cooling refrigeration equipment and steam raising.

If non-potable water is used for any purpose it must be piped separately in pipes painted red and routed clear of any part of the premises containing meat.

Mains water only is to be preferred.

Many authorities demand 'on site' water storage sufficient for one day's normal consumption. The recommended basis of calculation is 100 galls/day/pig, 60 galls/day/beast, 10 galls/day/sheep; 25% should be added to the total. Bacon factories and slaughterhouses with manufacturing facilities require special assessment.

An assurance from the local water authority should be sought that a continuous supply at reasonable pressure (minimum 15 p.s.i.) will always be available.

Effluent disposal

When a new slaughterhouse is designed there must be regard for the position of existing sewers to avoid routing 'dirty' drains under fresh meat handling and storage areas. A back up of foul water into these areas could cause severe contamination of meat.

The site should preferably be connected to a town sewerage system and the local authority must be consulted at an early stage to determine the extent of pre-treatment if any is required.

Manure, fat and blood are the main constituents of slaughterhouse effluent which an overloaded sewerage system may be unable to treat. Simple, relatively inexpensive means exist to extract these materials before discharge to the main sewer. Many solids can be removed by a rotary brush mounted over a perforated plate screen which is in turn sited over settling tanks. The tanks allow fat to solidify and float and suspended solids to precipitate for easy removal. Bar screens are unsuitable for slaughterhouse effluent because they are easily clogged and require constant attention. Blood should be excluded from the drainage system and various types of tank are available for its

collection at the bleeding position. (Further reference to blood is made in part III. THE SLAUGHTERHOUSE).

The effluent discharge to the mains sewerage should be as direct as possible and preferably on the dirty side of the site. Where the slaughterhouse drainage system is lower than the authority's mains the effluent must be pumped to the higher level.

In the absence of mains sewerage a full treatment plant may be necessary, and specialist advice should be obtained. The local authority and river board must be fully consulted on the standards they demand for treated effluent.

Power supply - electrical

This is used throughout the slaughterhouse and must be available as an industrial 3 phase supply.

It is prudent to install a stand-by generator to power the refrigeration plant in the event of mains failure.

Steam and hot water supply.

If available, a gas supply can be used to fire a water or steam boiler. If other fuels are used adequate bulk storage must be provided.

SITE FACILITIES

Traffic circulation

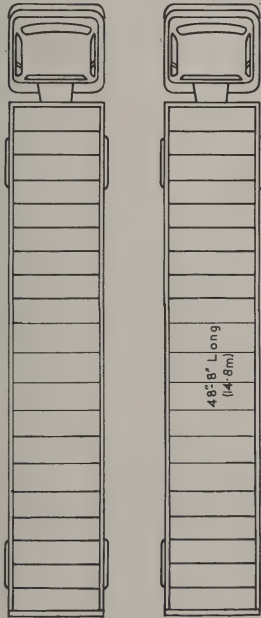
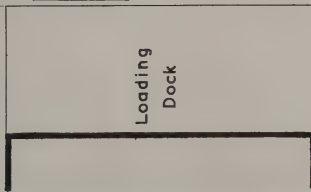
Considerable space is required for the movement and parking of vehicles on the site and this should be appreciated at the time of site selection.

The present (1974) maximum permitted dimensions of an articulated vehicle, with containers, are 8' 2½" (2.46 m) wide by 48' 8" (14.8 m) long. A vehicle of this size has a turning radius of 45' 0" (13.7 m) measured to the centre line of the front wheels of the cab. However, when parked square to a loading dock, alongside other vehicles at 12' 0" (3.66 m) centres, a distance of 96' 0" (29.28 m) is required from the dock to make a right angled turn (see FIGURE No.1). This dimension is reduced to 65' 0" (19.82 m) if vehicles are parked at 45° to the dock (FIGURE No.2).

A space of at least 100' 0" (30.5 m) should be reserved between the front of a loading dock and an opposing boundary for vehicle parking and movement.

Roads should be at least 10' 0" (3.05 m) wide but this dimension must be increased to 20' 0" (6.10 m) where vehicles pass each other and due allowance must be made for the swept path of vehicles on bends.

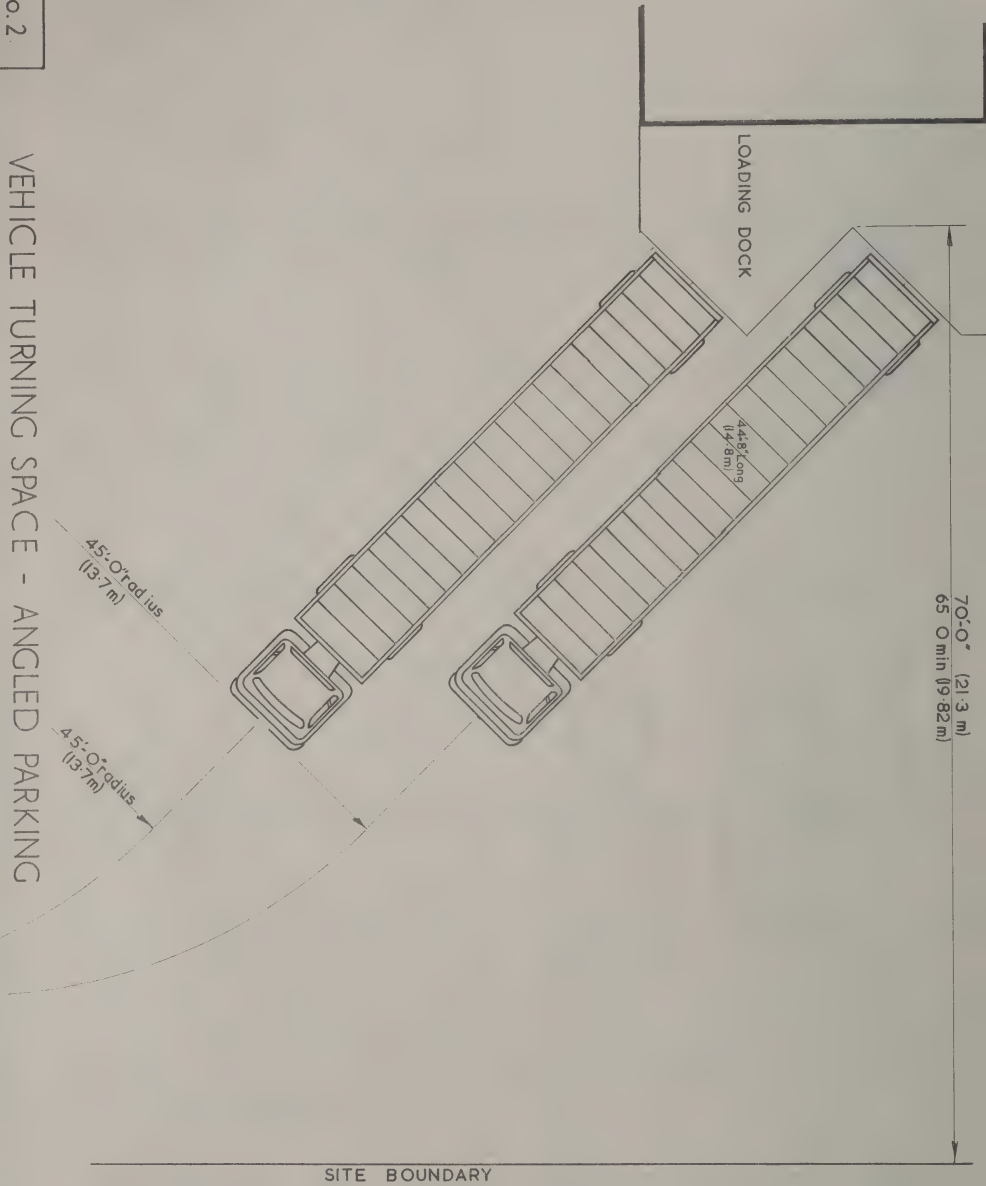
100'-0" (30.5m)
96'-0" min (29.28m)



VEHICLE TURNING SPACE - SQUARE PARKING

MLC. FIG. No. 2

VEHICLE TURNING SPACE - ANGLED PARKING



MLC. FIG. No. 2

Site roads and forecourts must be surfaced and drained to prevent contamination by dust and standing water and to facilitate cleaning.

Vehicle washing

Surfaced and drained areas, equipped with high pressure washing facilities, are recommended in both the clean and dirty sections for the cleaning of dirty meat vehicles before loading and stock lorries after unloading. Stock lorries should also be disinfected. (A list of disinfectants recommended for use with livestock vehicles, and advice on their use, is available from Divisional Veterinary Officers of the MAFF or the DAF for Scotland).

Manure bay (see FIGURE No.3).

This must be provided on the dirty side of the site, preferably near the lairage. Although no specific size is stated in the regulations its minimum dimensions are dependent on throughput and the means of handling the manure. The width across the front should not be less than 9'0" (2.74m) if the lairage is cleared by tractor; this width will also accommodate a trailer or skip. The depth should equal the length of the trailer or skip, if used, but could not reasonably be less than 9'0" (2.74 m). The front may remain open but the other three sides should have imperviously faced walls at least 6'0" (1.83 m) high. The floor must be imperviously surfaced, slightly sloped to the front where a drain should be provided to prevent the overflow of liquors on to surrounding areas.

This drain could also take the effluent from stock lorries if the 'dirty' vehicle washing area is adjacent.

SITE PLANNING

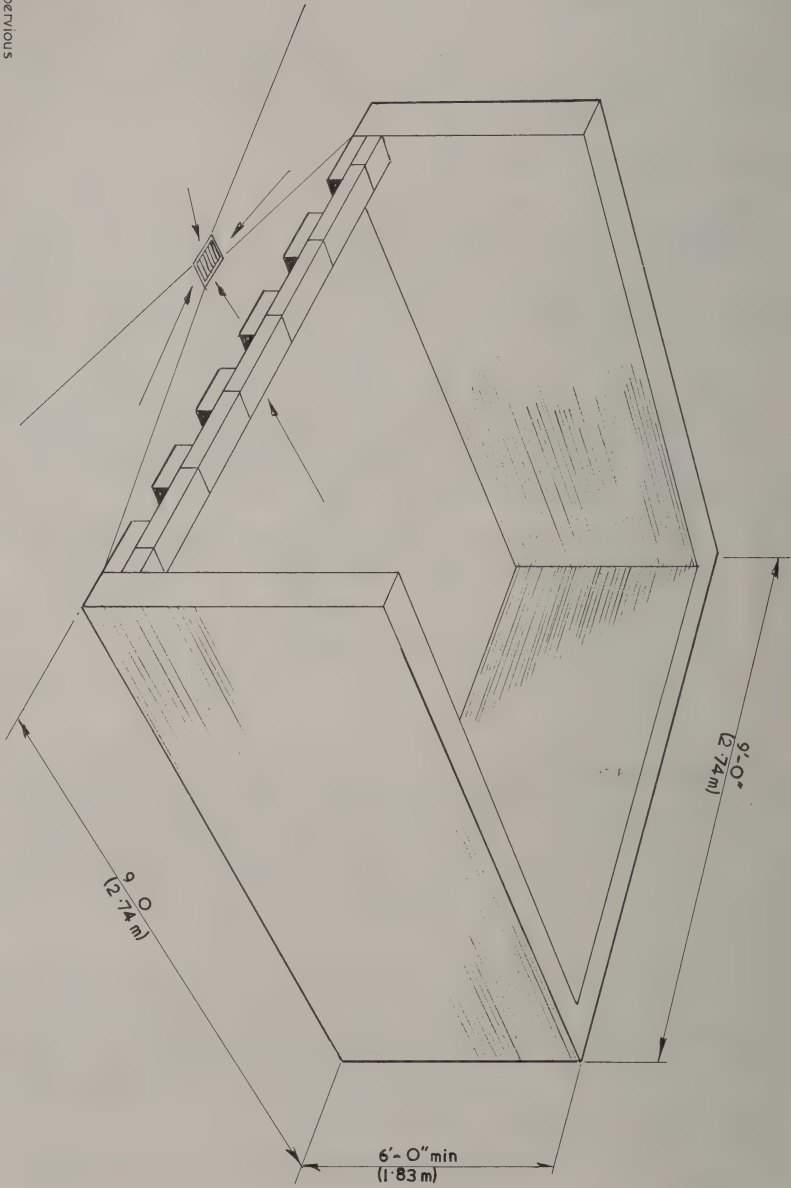
Size

The approximate acreage of site needed must be determined prior to selection. It is strongly recommended that, in addition to the building required to handle the initial throughput, space should be allocated for lairage, chill room and manufacturing expansion. The area surrounding the building used for vehicle movement, car and lorry parking, and clean and dirty lorry washing bays, should be planned to allow this expansion.

Because each slaughterhouse and site is individual no hard and fast rule can be made about site size. However, a small slaughterhouse (up to approximately 30,000 units per annum) will require one to two acres, a medium establishment (approx 50,000+ units per annum) two to four acres, and a large complex (approx 100,000+ units per annum) four to six acres. The acreages stated are based on the full design requirements for lairage and warehousing.

(For this purpose, one unit = 1 beast or 3 calves or 2 pigs or 5 sheep)

- NOTE.
- * Walls smooth and impervious
 - * Dimensions variable
 - * Front retaining blocks omitted
 - * Wheeled storage trailer
 - * Large trapped drain to retain straw



MLC. FIG. No. 3

TYPICAL MANURE BAY

MLC. FIG. No. 3

Orientation

The complete separation of clean and dirty areas and their respective vehicles is a paramount requirement for the approval of an EEC slaughterhouse.

The site should allow easy access from the road, unimpeded vehicle movement and a choice of building arrangement.

Ideally two entrance points are needed to obtain maximum separation of livestock and by-products vehicles from fresh meat areas. However, the shape of the site or restrictions imposed by Planning Authorities may allow only one entrance. In this event 'clean and dirty' vehicles should be routed to opposite sides of an island on which a gatehouse could be sited.

Because the sights, sounds and smells from a slaughterhouse may cause objection, sites adjacent to residential and industrial areas should be arranged with the lairage and by-products buildings furthest from the road and other property. If this is impractical it is desirable that the loading docks be screened.

In windy areas the 'dirty' buildings should, if possible, be sited down-wind from fresh meat rooms or other habitation.

Whilst a flat site is desirable, land which slopes may, with careful planning, be used to advantage to provide natural loading docks and, possibly, basement by-product rooms and multi-storey cold storage.

Narrow sites are difficult to plan and should be avoided unless vehicle access can be obtained at opposite ends of the site or a minimum road width of 30'0" (9.15 m) is available on the by-product side of the buildings for livestock vehicle access to the rear of the site.

FIGURE No. 4 indicates diagrammatically the principles of building arrangement and adequate separation applied to a regular site.

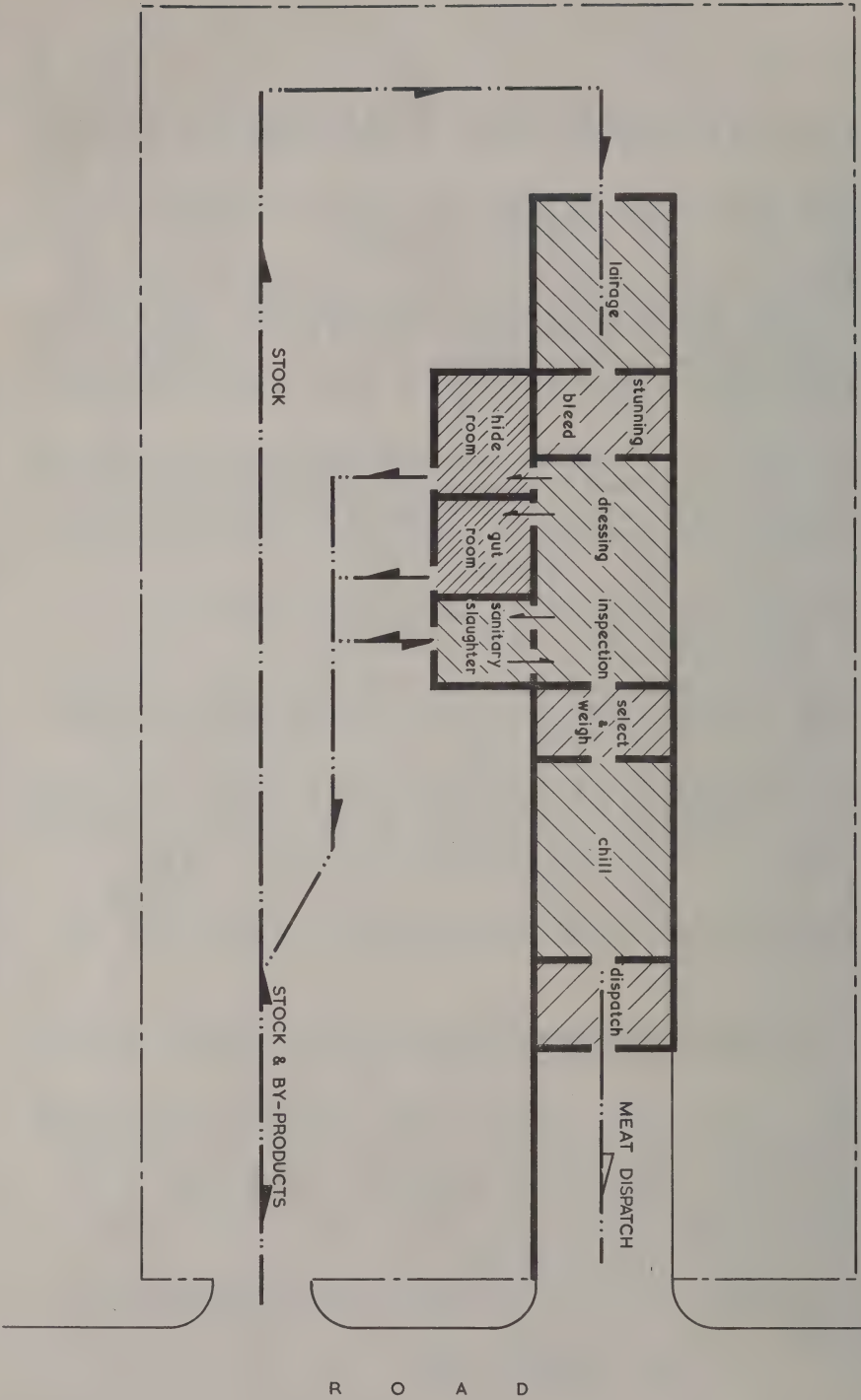
Security

EEC "Conditions for Approval of Slaughterhouses" sub para 1 (k) states "*Means of checking access to and from the slaughterhouse*".

The term "slaughterhouse" is interpreted to embrace all the buildings within the site curtilage and all external doors to these buildings must be lockable. The buildings must be proof against the entry of domestic animals, rodents, birds and insects. Entry to the slaughterhall and work rooms must also be denied to persons who are not wearing suitable protective clothing.

It is desirable that the site be surrounded by a security fence or wall (stock-proof in rural areas) fitted with lockable gates at all entrances.

DIAGRAM OF BASIC PRINCIPLES OF SEPARATION



II. THE LAIRAGE

EXTRACTS FROM RELEVANT EEC CONDITIONS

EEC DIRECTIVE, ANNEX I, CHAPTER I - Conditions for the Approval of Slaughterhouses requires

- 1 (a) *Adequate lairage for lodging the animals.*
- 1 (f) *Premises which can be locked reserved for stabling sick or suspect animals*
- 1 (v) *Appropriate arrangements for protection against intruding creatures such as insects, rodents, etc.*
- 1 (w) *Tools and materials, in particular containers, of material resistant to corrosion and easy to clean and disinfect.*

CHAPTER IV - Ante Mortem Health Inspections

- 14. *Animals shall be subjected to an ante mortem inspection on the day of their arrival at the slaughterhouse. This examination shall be repeated immediately before slaughter if the animal has been stabled for more than 24 hours.*

DEFINITION OF LAIRAGE

A lairage is an enclosed and covered area specially built within the curtilage of the slaughterhouse. Its capacity is determined by the daily throughput of the slaughterhouse.

Grazing land or open stockyards on or off the site are not classed as lairage in this calculation for purposes of determining throughput.

CALCULATION OF LAIRAGE SIZE

The Ministry of Agriculture, Fisheries and Food recommend the following areas for housing animals in all slaughterhouses.

Cattle	loose	25 - 30 sq. ft. (2.32 - 2.8 sq.m.)
	tied	35 sq. ft. (3.25 sq.m.)

Bacon Pigs)	
Small Pork Pigs)		6 sq. ft. (0.56 sq.m.)
Sheep)	
Heavy Pigs)		8 sq. ft. (0.74 sq.m.)
Calves)	

These areas relate to the actual pen space required. An additional allowance of 25 - 30% must be made for reception areas and passageways. In order to provide for welfare, hygienic conditions and ante mortem inspection the lairage should be at least sufficient for 24 hours holding *at usual killing rates*.

COMPOSITION OF LAIRAGE (See FIGURE No. 5)

Lairage buildings comprise

- 1) Reception area
- 2) Animal pens
- 3) Passageways
- 4) Isolation pen for suspect animals - but see page 18 and
SANITARY SLAUGHTER BLOCK page 55
- 5) Tie ups for horned or fractious beasts and individual pens for
large sows and boars
- 6) Fodder and bedding storage
- 7) Toilet facilities

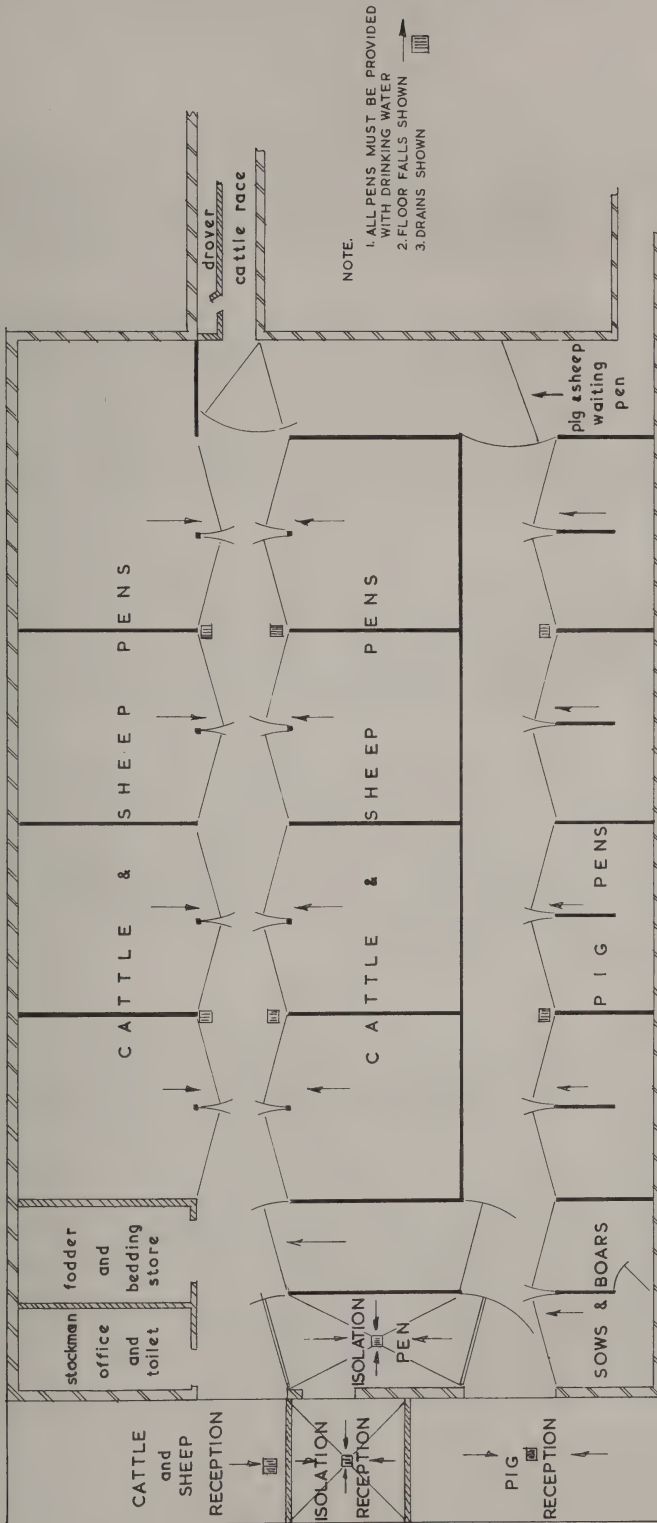
Reception area

Because livestock vehicles are usually higher than normal lairage buildings it will not always be possible to offload animals under complete cover. If possible, the reception area should be roofed to guard against adverse weather conditions.

Most animals will refuse steep decents and the offloading dock should preferably be constructed 3'6" (1.07m) high above road level to accommodate varying tailboard heights. On flat sites a compromise between lowering the road level and raising the reception floor will reduce the slope of the tailboard.

The offloading dock can be designed to accept wagons in straight line or angled formation but adequate width, allowing 12'0" (3.6m) per vehicle, should be available.

It is an advantage for each unloading point to be enclosed to keep species separate. If each one is individually drained and fitted with a curb then fouling of the roadway will be avoided.



TYPICAL LAIRAGE ARRANGEMENT

MLC. FIG.No.5

Animal pens

As the kills of different species predominate at certain times of the year it is wise to install some all-purpose pens with inter-linking passages to the stunning areas. Generally, however, pens should be provided for each species together with appropriate water and feed arrangements.

Cattle and sheep can be comfortably housed in pens of approximately 250 sq. ft. (23.5 sq.m). This size of pen will accommodate 8 to 10 cattle or 40 sheep. Pigs, however, are desirably held in families and smaller pens are more appropriate, say 65 sq. ft. (6 sq.m) to house 10 pigs. (These sizes are indicative only).

Although tubular fencing is commonly used to divide pens, solid walls give better protection from draughts, facilitate cleaning, and reduce stress to livestock.

If steel fencing is used it should be hot dipped galvanised after manufacture to meet the EEC requirement for materials to be resistant to corrosion. A zinc sprayed or painted finish is not suitable. Solid walls must be impervious to moisture. Pen divisions should, preferably, not be less than 4'0" (1.22m) high for cattle and 3'0" (0.91m) high for pigs and sheep, but the isolation pen walls should be 6'0" (1.83m) high.

Gates

As these are constructed in steel they should be hot dipped galvanised after manufacture. Latches and hinges should be strong but simple, easy to clean, and failsafe to prevent accidental opening by animals. There should not be any projections which will damage hides. Wherever possible gates should be single acting. Very few economically priced double acting gates have efficient locks or are simple to use and they are usually mechanically complex.

Passages

The width of passageways will, to some extent, depend on the method used for cleaning the lairage. A tractor with a scoop or trailer can be used in a width of 6'0" (1.83m) and a hand barrow in a width of 4'0" (1.22m).

Isolation pen

Suspect animals should not be received in the lairage but should be directed to the Sanitary Slaughter Block (see page 53). However, there will be times when they remain undiscovered until ante-mortem inspection and then they must be segregated immediately, if possible, to the Sanitary Slaughter Block. Alternatively, if the arrangement of the buildings makes this impossible an isolation pen approximately 10'0" x 8'0" (3m x 2.5m) must be provided within the lairage.

The pen must be solidly partitioned to a minimum height of 6'0" (1.83m) and equipped with a fully plated, lockable gate. The floor must be laid to falls of 2" in 10'0" (50mm in 3m) to a centrally positioned drain to prevent the overflow of manure. For veterinary inspection purposes, artificial light must be provided to an intensity of 20 ft candles (210 lux). It is an advantage if a few tying chains are provided for use during detailed examination.

Separate watering and feeding arrangements must be made.

Restraint of horned or fractious beasts, boars and large sows

A small proportion of horned animals still exist and some cattle and pigs can be dangerous; these animals must be restrained. Some tie ups with individual water and feed arrangements should be included in the animal pens for use when necessary. Individual pens for sows and boars should be provided.

Fodder and bedding storage

A separate room must be provided for the storage of fodder, preferably with direct access to the reception area. Size will vary with throughput, but 100 cu.ft. (2.8 cu.m.) are required to house approximately 1 ton (1000 kg) of mixed feed in bags and bales.

Bedding should be stored under cover and an area of 120 cu. ft. (3.3cu.m.) will house approximately 1 ton (1000 kg) of baled straw.

Toilets

A W.C. and hand wash basin for drovers, also conveniently situated for lorry drivers, should be provided adjacent to the lairage.

WATER

A supply of fresh drinking water must always be available to the animals. Most drinking appliances are fitted with low pressure automatic valves to regulate the supply. These should be connected to a covered storage tank which should be mounted in the roof space and accessible for regular cleaning. The tank will ensure a continued supply of water even when the mains supply is interrupted. Galvanised or plastic piping should be routed to the water troughs from above. Pipes from the floor are easily damaged and costly to repair.

Drinking appliances must be manufactured of material resistant to corrosion and fixed firmly to walls or floors with sufficient clearance for all round cleaning. In-situ concrete troughs should have rounded corners and be covered to the floor. Arrangements should be made to prevent the animals fouling the water.

FEEDING

Racks or troughs as appropriate must be provided in the pens. They must be manufactured of material resistant to corrosion and be fitted with adequate clearance all round for cleaning. Racks should not be positioned above water troughs.

BUILDING

A lairage building need not be elaborate and standard steel or concrete frame buildings are suitable. It is suggested that rendered brick or concrete block boundary walls be built within the line of stanchions to avoid awkward projections into the lairage and the problems of cracks developing between the stanchions and walls due to uneven expansion and contraction.

The roof may be single skin asbestos sheeting, but double skin construction with an air space between the sheets will reduce the effects of extreme climatic conditions.

Portal frame construction is to be preferred to a column and truss formation because it is more easily cleaned. All exposed structural steelwork should be hot dipped galvanised after manufacture to resist corrosion.

FLOORS AND DRAINAGE

Detailed information on the individual characteristics of various suitable materials will be found in MLC Technical Bulletin No.1 "Floors and Walls of Slaughterhouses and Meatworks".

For lairages, tamped concrete is the cheapest floor finish and will normally prove to be satisfactory provided adequate curing time has been allowed. The junctions between floors and walls should be coved and all wall junctions must be rounded.

Excepting the isolation pen all drainage should be sited outside the animal pens in the passageways and the pen floors must be laid to a fall of 2" in 10'0" (50 mm in 3m).

Passage floors are best constructed level with a slight convex camber to open channels connected to drains along each side. Bucket trap gullies will prevent the flow of straw into the drainage system but they must be cleaned regularly.

LIGHTING

Because the level of natural light varies with time of day and season of the year it is becoming normal practice to rely on artificial lighting. No specific degree of lighting is stated in the regulations but it should be sufficient to enable a satisfactory examination of animals to be made. It is suggested that the intensity should be 10 ft. candles (110 lux). As a guideline, the US Department of Agriculture demand 10 ft. candles generally throughout the lairage with an increase to 20 ft. candles over the entire area of the isolation pen.

VENTILATION

Draught free ventilation is required and is best achieved by simple means. A continuously open ridge ventilator will ensure the extraction of stale air from the whole lairage. Fully adjustable, wall mounted, air inlets will enable the flow of air to be controlled to suit climatic conditions. As no level of ventilation is stated in the regulations it is advised that the opinion of a heating and ventilation specialist be sought.

III. THE SLAUGHTERHOUSE

BASIC DESIGNS

For EEC purposes the slaughterhouse is divided into three primary areas: lairage, slaughterhall and refrigeration. Provided that the size of the site is adequate the lairage and refrigeration blocks can be expanded to meet increased production, but the slaughterhall, which is a complex of carefully positioned areas and ancillary rooms, must be planned from the outset for all foreseeable demands.

Obviously a slaughterhall design which restricts operations to one species at any one time differs greatly from one which permits the simultaneous slaughter of two or three species, but each system has its merits when correctly matched to throughput and specific trading practices.

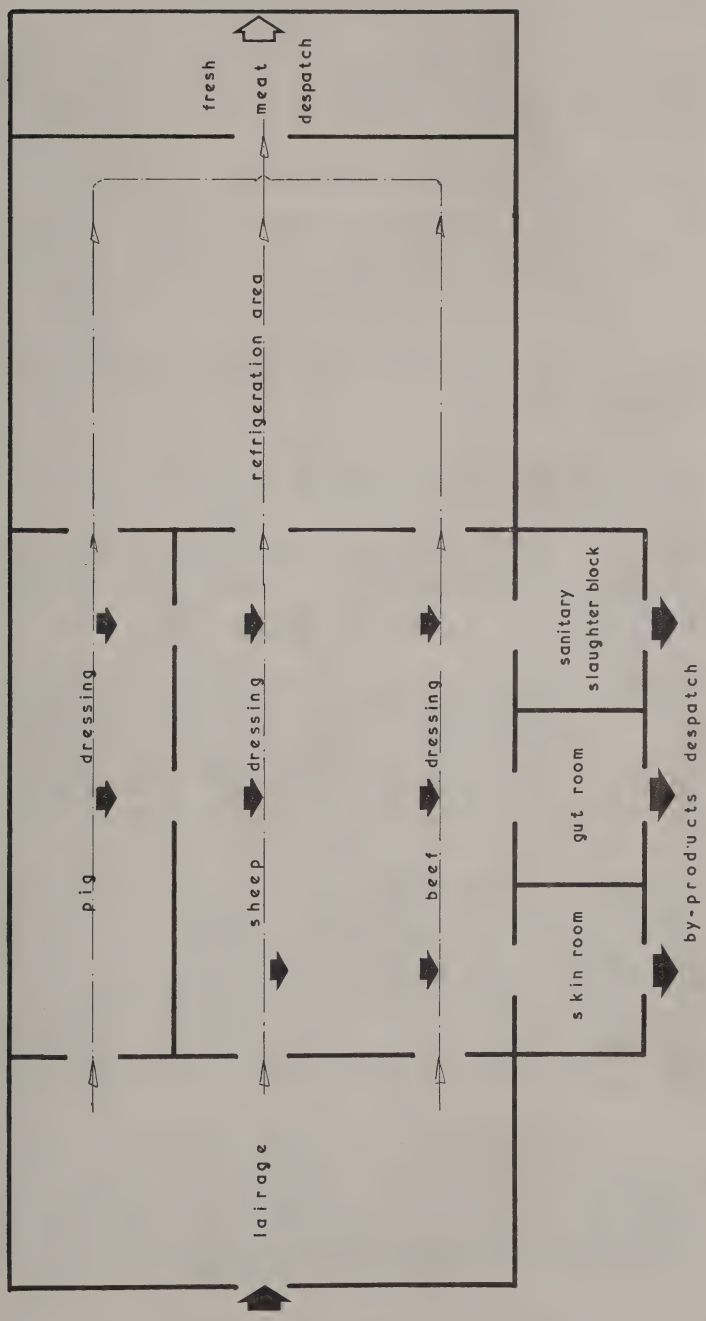
Current trends limit the choice of design to a few systems, and the most common of these are now compared and the effects upon them of relevant EEC conditions stated.

Conventional single floor abattoir (FIGURE No.6)

During the 1930's the bay or booth system of slaughtering was gradually superseded by various forms of sequence dressing. These allow carcasses to move progressively through the dressing area for the removal of inedible products to the appropriate by-products rooms adjacent.

In the early 1950's following a general acceptance of cattle bed dressing a common pattern evolved of sequence slaughterlines for each class of animal set parallel along the slaughterhall. The by-products rooms were placed to one side. In this system the cattle line should be sited next to the by-products rooms with the pig and sheep lines parallel, but further away. The immediate removal from the slaughterhall of inedible cattle by-products is possible but skins and by-products from the pig and sheep lines have to cross the cattle line where clean carcass meat may still hang. Although the recent introduction of pneumatic conveying offers a partial solution to this problem the movement of sheep skins across the cattle line will prevent the simultaneous slaughter of cattle and sheep for both practical and hygienic reasons. EEC DIRECTIVE, ANNEXE I, CHAPTER I, Condition 1(1) requires '*An adequate separation between the clean and polluted section.*'

A further EEC Condition which affects the basic system is 1(b) which requires '*In slaughtering premises where both pigs and other species are slaughtered, a special section must be provided for slaughtering pigs; however that special section shall not be mandatory if slaughtering of pigs and other animals takes place at different times but, in that case, the scalding, depilation, scraping and singeing operations must take place in special sections clearly separated from the slaughter line, either by an open space of at least 5 m or by a partition at least 3 m in height.*'



DIAGRAMMATIC ARRANGEMENT
CONVENTIONAL SINGLE FLOOR ABATTOIR

From the foregoing it follows that a single storey, multi-species slaughterhall designed on parallel lines will be limited to the slaughter of one class of animal at any one time unless there is complete and structural separation of the pig section.

Single storey buildings are simple to construct and parallel line systems are economical to equip. They are suitable where throughputs are moderate and one slaughtering gang can handle all species, with utmost regard for hygiene, during normal working hours.

Tee variation of single floor abattoir (FIGURE No.7)

Experiments in the 1950's led to the development of Tee-formation slaughterhouses with converging lines enabling cattle and sheep to be slaughtered in one section and pigs in another, the dressed carcasses being marshalled in the central refrigeration section.

This system can be made to achieve adequate separation of pig slaughtering but the problems of simultaneous cattle and sheep slaughter remain.

Additionally the split lairage raises difficulties of transport access and adequate provision for lairage expansion unless the shape of the site is suitable.

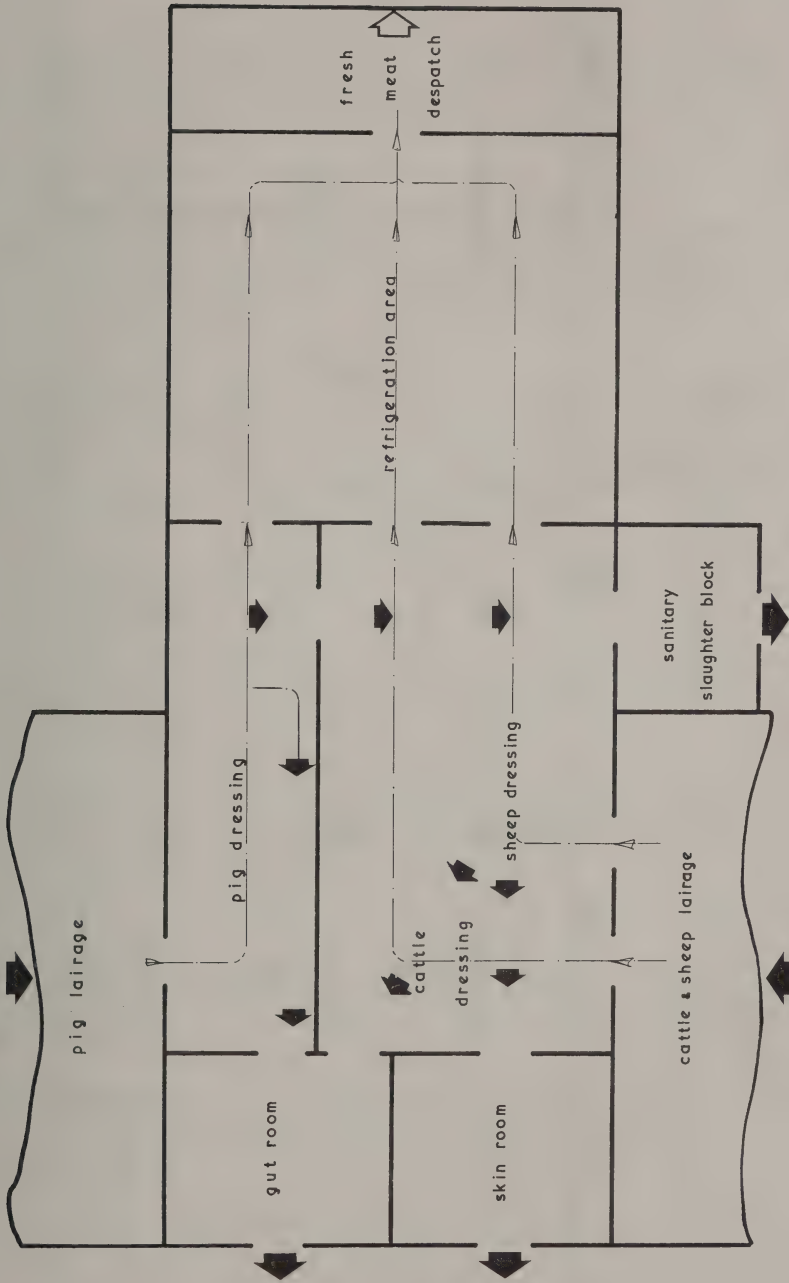
This form of design is suitable for establishments with large pig throughputs and a preponderance of either cattle or sheep.

Full multi-storey construction (FIGURE No.8)

Slaughterhouses built on two or more levels were once common on the continents of Africa and America. *Hourly* killing rates were high and it was usual for the by-products of slaughter to be processed on the lower floors. With the slaughterhall uppermost and by-products directed by means of chutes to the floors below complete separation of slaughterlines could be achieved, thus allowing simultaneous work on all species.

In the United Kingdom, skins, tripes, casings, bone meal etc., are more often processed in separate premises. For this reason alone full multi-floor construction will generally be uneconomical because large areas beneath the slaughterhall will exceed requirements. Added to this is the expense of elevators or ramps to raise *all* animals to the top floor, conveyors to lower carcasses to the dispatch area and yet more conveyors to return slaughter accessories to the point of use. Compared with a single storey slaughterhouse twelve additional elevators and de-elevators are required.

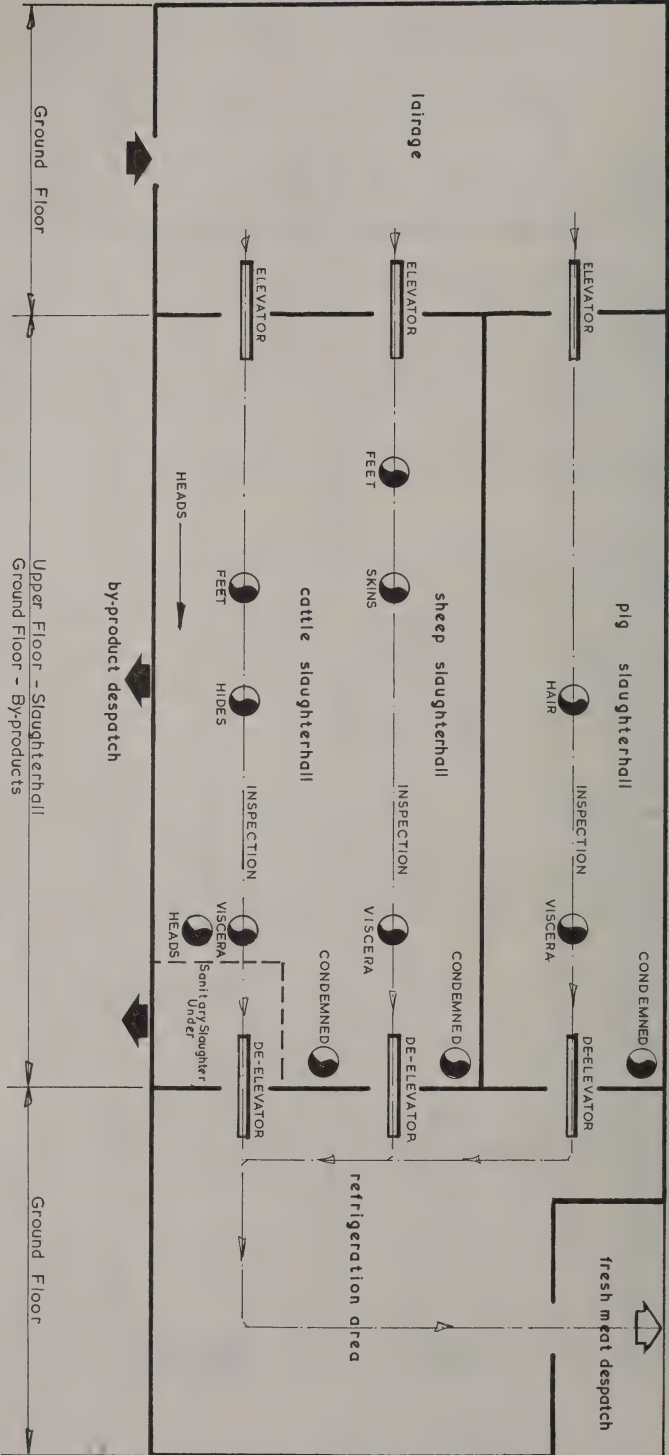
The rational positioning of rooms at lower floor levels poses a major design problem. By-products are directed to these rooms by chutes functionally sited on the slaughter floor. The discharge point of a chute is dictated by its critical angle of descent. This varies with the type, weight and bulk of the product. Co-relation between slaughter and by-products floors is usually only achieved by



DIAGRAMMATIC ARRANGEMENT
TEE VARIATION OF SINGLE FLOOR ABATTOIR

MLC. FIG. No. 8

DIAGRAM OF THE FULL MULTI-STORY CONSTRUCTION



MLC. FIG. No. 8

compromise which is detrimental to efficiency. (*Note - whilst chutes are generally satisfactory for by-products, cattle paunches are liable to burst on impact if the angle or length of the chute is excessive*).

Because multi-storey slaughterhouses are capable of high throughputs their use is economically limited to large establishments. There are, however, special cases where steeply sloping sites may be used to advantage for medium throughput slaughterhouses.

Split level construction (FIGURES Nos. 9, 10 and 11)

The advantage of single and multi-floor design may be economically combined in split level construction. A sloping site may allow a system of parallel slaughterlines or individual slaughterhalls to be sited over a semi-basement by-products area but this situation can also be created artificially.

The height of multi-species slaughterhall is governed by the height required for cattle bleeding. This is almost double that required for pig and sheep slaughter and the by-products rooms. With a minimal increase in height the pig and sheep slaughterlines can be accommodated over the by-products area whilst the cattle dressing line can be located alongside at ground level.

Sheep and cattle lines are now separate and if the pig line is also walled off from the sheep line at the upper level all three systems may be worked simultaneously.

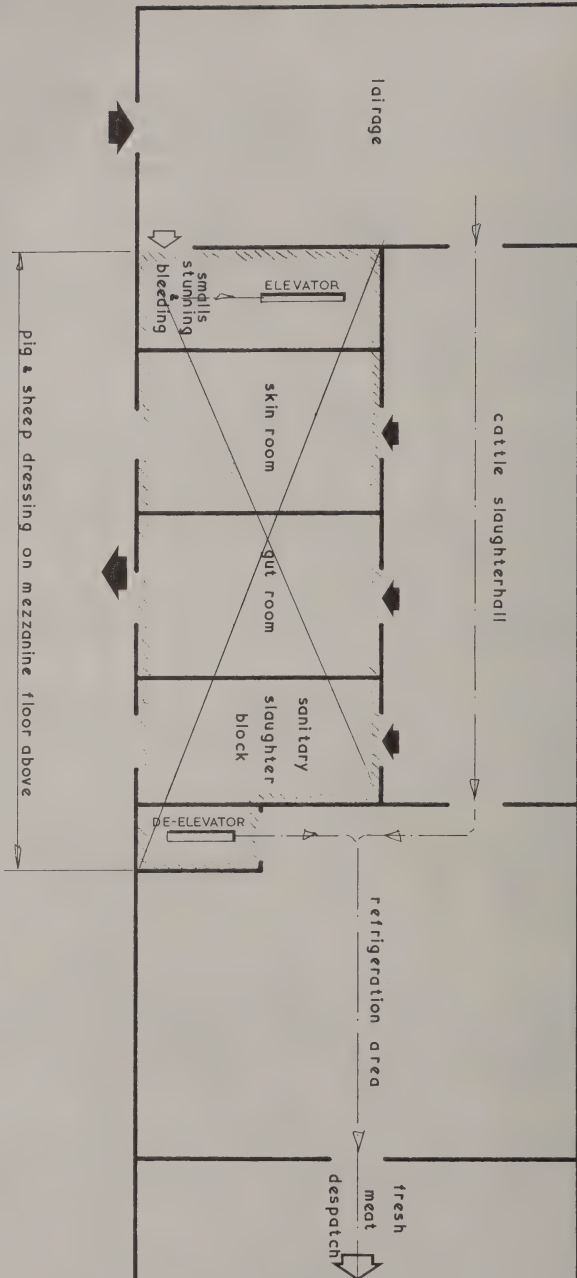
Whilst elevators and chutes are needed they can be designed to handle smaller and lighter loads. The location of the by-products rooms at ground level is ideally sited for the functional placing of chutes on the pig and sheep slaughterfloor.

The design is economical in the use of ground and usually allows standard steel or concrete frame buildings to be utilised. This system, which is totally flexible, can be tailored to suit throughputs of up to 100,000 units per annum.

Summary

The factors which influence the choice of a suitable system are the present and projected throughputs, the balance of species to be slaughtered, and the limitations imposed by existing buildings or planning authorities.

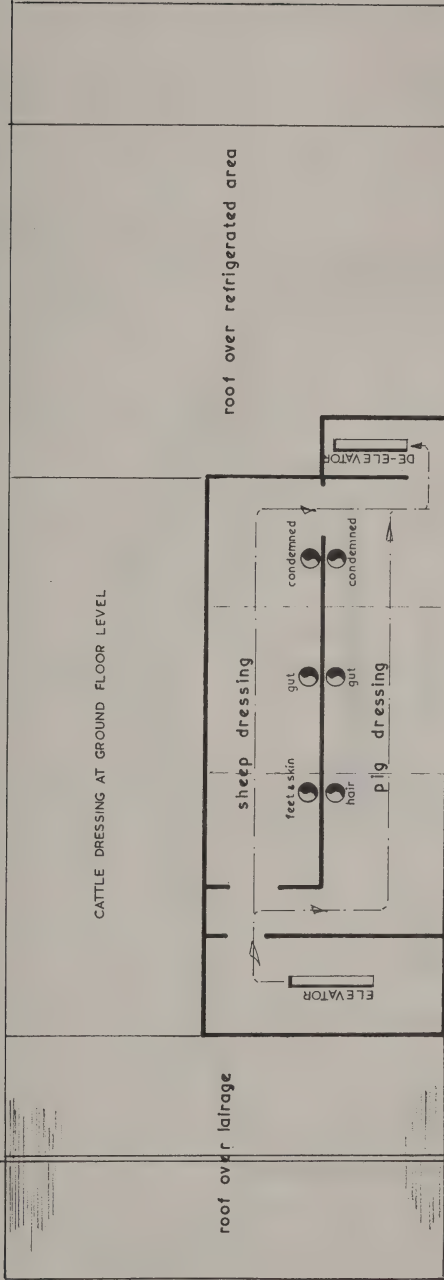
To gain EEC export approval the slaughterhouse system must fulfil the conditions for "*An adequate separation of the clean and polluted section*" and incorporate total or partial separation of pig slaughtering.



MLC. FIG. No. 9

DIAGRAM OF GROUND FLOOR
OF
SPLIT LEVEL CONSTRUCTION

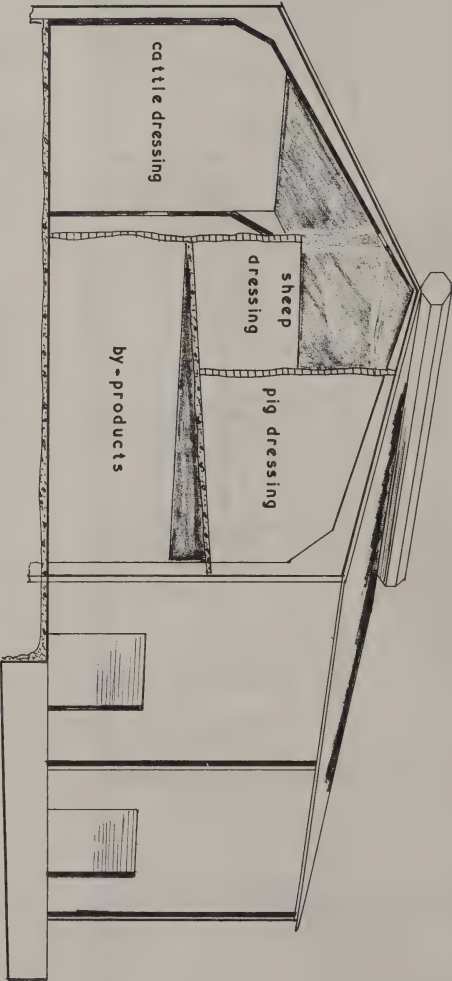
MLC. FIG. No. 9



DIAGRAMMATIC ARRANGEMENT
OF

MEZZANINE FLOOR OF SPLIT LEVEL CONSTRUCTION

DIAGRAMMATIC PERSPECTIVE VIEW
OF
SPLIT LEVEL CONSTRUCTION



EXTRACTS FROM RELEVANT EEC CONDITIONS - GENERAL

EEC DIRECTIVE, ANNEX I, CHAPTER I - Conditions for the Approval of Slaughterhouses requires

- 1 (b) *Slaughtering premises of such a size that work can be carried out satisfactorily*
- 1 (L) *An adequate separation between the clean and polluted section;*
- 1 (t) *Arrangements so that, after slaughter, dressing can be carried out as far as possible on the suspended animal; where skinning is carried out on metal cradles, they shall be of material resistant to corrosion and of a height such that the carcass does not touch the floor;*
- 1 (u) *A network of overhead rails for the subsequent handling of the meat;*
- 1 (w) *Tools and materials, in particular containers, of material resistant to corrosion and easy to clean and disinfect;*

Note. EEC Conditions which are specific to a particular slaughtering operation are quoted in the text relevant to that operation.

MAKE-UP OF SLAUGHTER AREA IN AN EEC APPROVED SLAUGHTERHOUSE

In an EEC approved slaughterhouse the slaughter area is divided into three main sections each of which is sub-divided:

- 1. SLAUGHTERHALL
 - Cattle system
 - Sheep system
 - Pig system
- 2. BY-PRODUCTS AREAS
 - Hoof, horn and skin room
 - Gut room
 - Triperry
 - Fat room
 - Edible offal rooms
- 3. SANITARY SLAUGHTERBLOCK
 - Isolation lairage
 - Sanitary slaughterhall
 - Detained room
 - Condemned room

SLAUGHTERHALL - GENERAL

The EEC Directive, the Hygiene Regulations governing England and Wales, and the Scottish Preparation and Distribution Regulations require slaughterhouses to be constructed with *adequate* space so as to permit the hygienic dressing of carcasses. The object of the following sections is to interpret the term "adequate".

The width required to perform any individual task on a slaughterline is unaffected by throughput, but the length of the line and the number of working stations vary with the killing rate. The working area is not necessarily proportionate to throughput because certain operations, notably stunning, bleeding, gutting, and splitting, require the same area over a large range of throughputs.

For this reason the dimensions stated in the text and illustrations indicate the desirable space required for a particular operation regardless of the rate of slaughter. Where the maximum slaughter rate for a given size is known, this is stated.

Some modifications of dimensions must inevitably arise due to individual building arrangements but the dimensions stated should be used as practical guidelines.

CATTLE SLAUGHTERHALL

Cattle Race

The link between the lairage and the cattle stunning pen is formed by a *cattle race* approximately 2'9" (0.83m) wide and a *drovers passage* about 1'6" (0.46m) wide.

In normal circumstances the base of the *stunning pen* is approximately 1'6" (0.46m) higher than the slaughterhall floor. The race, therefore, slopes upwards and for animal safety the floor should be rough tamped to a cross ridge pattern. The length of the approach race may be between 10'0" and 12'0" (3.05/3.66m).

For operator safety and increased efficiency the use of a drovers passage is preferable to direct droving behind the beasts. The race and passage should be separated by a wall about 5'0" (1.22m) high. To ensure maximum operator control over the animal the passage floor should be placed 1'0" (0.3m) higher than the race floor.

A well lit stunning pen will encourage the beasts to enter the pen readily. A straight line race is best for efficient droving, but if bends are unavoidable they should be gradual and limited to 90°.

Stunning and Bleeding Area

(FIGURE No.12)

The cattle stunning and bleeding area of an EEC approved slaughterhouse must be equipped with a stunning pen to comply with the United Kingdom Slaughter of Animals (Prevention of Cruelty) Regulations. A *bleeding rail* is required to meet, in full, the EEC condition 1(t) '*....dressing to be carried out, as far as possible, on the suspended animal.....*' Thus, if cradle dressing is practised, a bleeding rail and a means for lowering the carcasses will be required to position the beast on the cradle.

Stunning pen

All British made, fully enclosed, stunning pens comply with United Kingdom regulations. The preferred type uses a specially shaped concrete floor in conjunction with a revolving discharge door. These are simple to operate and require minimum maintenance. Complex designs based on tipping or dropping floors with counterbalanced doors offer no additional advantage but require frequent servicing and are difficult to cleanse. One stunning pen can handle about 60 beasts per hour, and a double throw pen can handle up to about 100 beasts per hour.

Dry landing area

This, the area in front of the stunning pen where the beast falls, should be designed to ensure the safest possible working conditions for the slaughtermen to perform the pithing, hind leg shackling and hoisting operations.

A distance of at least 3'0" (0.92m) is recommended between the front and back ends of the pen and any wall or obstruction. A minimum clear space of 10'0" (3.05m) should exist between the exit door of the pen and the opposing wall or blood trough. 14'0" long by 10'0" wide (4.27m x 3.05m) is the minimum desirable space for safe working, regardless of throughput, and is adequate for slaughter rates as high as 60 cattle per hour provided that a high speed bleeding hoist, fast enough for this rate, is installed.

The hoist hook should ideally be set 6'0" (1.84m) from the exit door of the pen, preferably on the pen side to avoid damage to the hoist chain or metal cable and the rail, and should be located towards the back legs.

The floor of the dry landing area is subject to impact loads from carcasses and shackles, so the finish should not only withstand this impact but also be resistant to acid and blood and have good antislip qualities.

The floor should be kept as dry and clean as possible to avoid increasing hide contamination. It must be laid to falls of 2" in 10'0" (50 mm in 3 m) preferably to a gully sited adjacent to the blood trough.

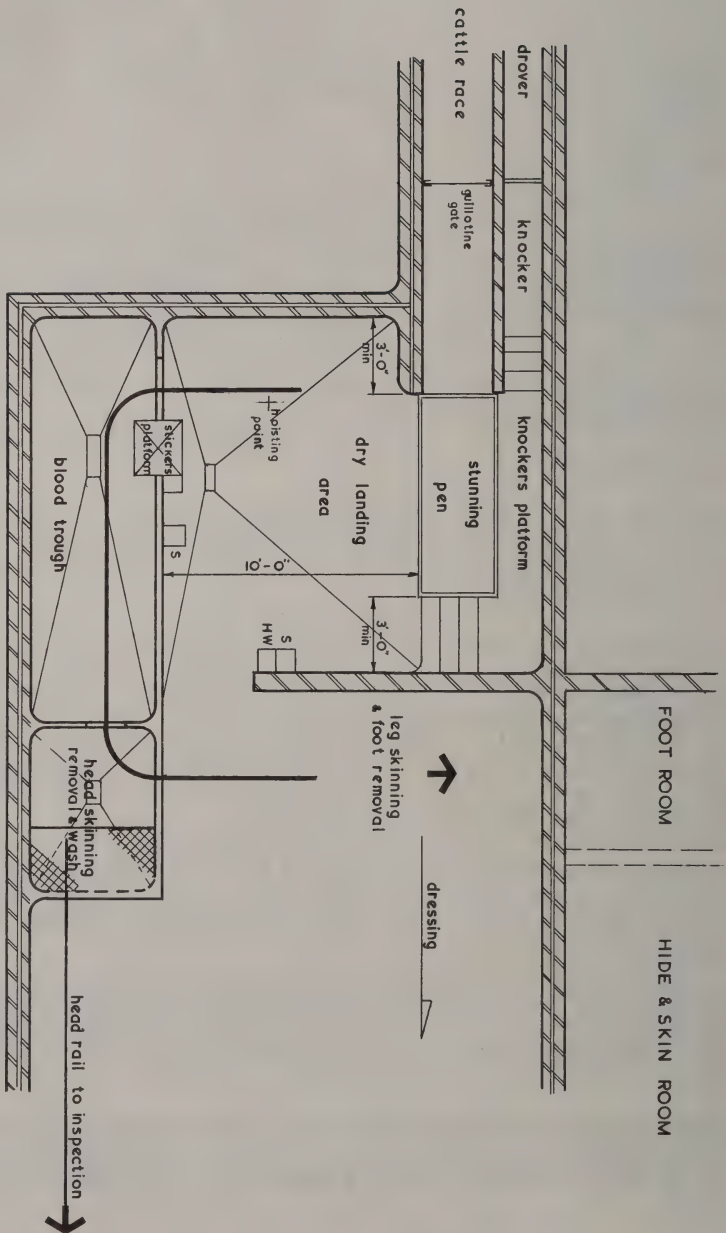


DIAGRAM OF
TYPICAL BEAST STUNNING & BLEEDING AREA

It is advised that the landing area be enclosed by a wall 3m high to separate it from the dressing area. The falls of the dressing room floor should direct water away from the landing area.

Blood trough

The blood trough should preferably be 4'9" (1.6m) wide and enclosed by a wall up to 4'0" (1.22m) high along the open side. The blood trough should be so drained and of such a size as to prevent splash and overflow of blood onto the floor. The trough may be fitted with a double drain to enable the blood to be salvaged - one opening for blood and the other for wash down water. A removable plug seals the opening not in use.

Anti-splash walls around troughs should have rounded or steeply sloping tops to prevent them being used as shelves.

The length of the trough may vary but cannot reasonably be less than 8'0" (2.44m) for throughputs up to 15 cattle per hour.

Based on a bleeding time of eight minutes with beasts hanging from the bleeding rail at 2'0" (0.61m) centres the following usable trough lengths are suitable:

up to 15 per hour = 8'0" (2.44m)	2 beasts bleeding + one sticking position
15 to 20 per hour = 10'0" (3.05m)	3 beasts bleeding + one sticking position
20 to 30 per hour = 12'0" (3.66m)	4 beasts bleeding + one sticking position
30 to 40 per hour = 16'0" (4.87m)	6 beasts bleeding + one sticking position

Throughputs over 40 per hour require special consideration, possibly including mechanical conveying.

If the trough is cast in concrete or built in masonry, it must have an impervious surface and all junctions with the floor and walls must be coved. It may also be surfaced in stainless steel or aluminium and all connections to the building must be made with an impervious grout.

To gain adequate clearance of the beast over the trough the bleeding rail should be no lower than 15'0" (4.57m) but a height of 16'0" (4.87m) is desirable to facilitate head skinning and removal.

The bleeding rail is best positioned 3'0" (0.9m) from a wall face. A rustless metal plate fixed at foreleg and hind leg level along the full length of the trough will prevent wall damage and consequent bacterial growth in any damaged area. Metal plates must be sealed to the wall with an impervious mastic.

One or more sterilizers for the sticking knife and pithing rod, together with hand wash facilities, must be provided in this area, and conveniently sited for the operators.

Head and Foreleg Removal (FIGURE No. 12)

These operations should be carried out while the beast is suspended from the bleeding rail. Heads must be completely skinned and must be washed immediately after removal and before transfer to the inspection point. The head may be hung, for washing, from a fixed hook, but to avoid undue handling preference should be given to the use of a low level rail which connects direct to the inspection position.

A high pressure water spray from a hand held gun provides the best means of cleaning the head, mouth and nostrils. To prevent oversplash of water, blood, vomit and mucus the wash area should be shielded. The wash water and excess blood should be led to a drain from both the head removal and wash areas. A suitable arrangement utilizes a separately drained trough or an open grating mounted at floor level over a drain.

At this stage the forelegs may be severed and removed if the layout allows their immediate dispatch from the slaughter floor. Failing this they may be placed in receptacles to facilitate their removal from the slaughterhall.

Knife sterilizer and hand wash facilities must be provided convenient to these operations.

Carcase Dressing Systems

A new slaughterhouse should, if the killing rate exceeds 10 cattle per hour, incorporate a *vertical beef system*, but smaller units may be equipped for "*cradle dressing*"; these and existing premises incapable of conversion to the vertical system must use static or moving cradles to ensure that no part of the carcass can touch the floor.

The cradle must be constructed from materials resistant to corrosion. The use of stainless steel is preferred but if mild steel is used it should be hot dipped galvanised after manufacture. Wheels must be impervious to fat, blood and water but metal tyred wheels should be avoided to prevent damage to the floor finish.

Two rail cradle dressing system

Many older slaughterhouses have this system in which, after cradle operations, the carcass is hoisted and suspended from two rails approximately 3'6" (1.07m) apart to splay the carcass for viscera removal and splitting. The distance between the dropping and

hoisting points should be sufficient to prevent the possibility of cross contamination between carcasses. A bed length of 12'0" (3.66m) permits the simultaneous dressing of one carcass on the cradle and one on the dressing hoist. If two cradles are used side by side a distance of at least 10'0" (3.05m) is required between the cradle centres.

The length of the double dressing rails should permit the hanging of at least three carcasses with a distance of 5'0" (1.52m) between each to allow sufficient working space for hide removal and splitting. The minimum distance between the centre of the bed and a wall face is 6'0" (1.83m).

Because most of the gutting and hide removal work is concentrated in the area of the dressing hoist the entrance to the gut and hide rooms should be adjacent to this point. This will permit the direct disposal of by-products away from the line of carcasses. The edible offal rail or truck should be sited on the side furthest from the by-products rooms.

Stomachs and intestines cannot pass directly to the gut room after removal because they must remain in the slaughterhall to be correlated with the carcass, head and offal until completion of inspection of that carcass and offal. To meet EEC requirements the carcass of a bovine animal older than 3 months must be split before final inspection of the carcass. An area next to the gut room, should be reserved for stomachs and intestines awaiting inspection. They may be held in paunch trucks or raised by a mechanical skip to a table of sufficient length to allow at least 3'0" (0.92m) for each set of stomach and intestines retained.

The dressing area must be equipped with hand wash facilities and sterilizing units in sufficient number and readily accessible to the operators. The sterilizing box must be large enough to hold a saw blade from the splitting saw. These blades must be sterilized several times during the working day and in any case after contact with a suspect carcass. Wherever possible blades should be sterilized in-situ.

Single rail dressing system using cradles

With this system the carcass is raised from the cradle and both rollers landed on a single rail and spread mechanically. Whereas the double line system concentrates most of the dressing operation to the area of the dressing hoist, the single line permits greater flexibility in the positioning of the work stations. These stations should be spaced at least 5'0" (1.52m) apart but 6'0" (1.83m) centres are preferred.

The observation concerning evisceration/inspection made in the double line description applies to this system.

At the sawing position a powered platform may be installed. This should be located close to the evisceration point to avoid delay over the inspection of stomachs.

Knife and saw sterilizers and hand wash facilities must be provided convenient to the work stations.

Vertical dressing system - loop or ring

The loop or ring system of vertical beef dressing is particularly suited to new low throughput slaughterhouses or to existing premises where space is limited.

Following hind leg skinning and removal on the extension of the bleeding rail the carcasses are transferred to trees or gambrels which are permanently suspended from an independent ring runway. The trees on which the legs are spread turn 360° to permit work all round the carcass from a fixed position, and hide removal, evisceration and splitting can be carried out on whichever side of the rail is most convenient and hygienic. On completion of the dressing operation the carcasses are transferred to the general slaughterhouse rail system while the trees are returned to the first transfer point.

Platforms must be constructed from materials resistant to corrosion and should be fitted with impervious non-slip flooring.

Sterilizer and hand wash facilities must be immediately available to platform operators.

Vertical dressing system - single line

Most current systems of vertical beef dressing utilize a single dressing line, connected to the general rail system, onto which carcasses are placed after hind leg skinning and removal. It is not possible to turn the carcass because each hind leg is attached to a roller on the rail. Carcass orientation and platform sitings are therefore critical. However, a mechanical turntable may be installed in the rail to enable the carcass to be turned 180° for gut removal.

The *back* of the carcass should face the by-products room for hygienic hide removal and the possible installation of a de-hiding machine. This can be accommodated either by means of the layout or a dressing rail turntable.

Working positions along the line should be at least 5'0" (1.52m) apart but 6'0" (1.83m) centres are preferred (essential with a conveyor).

The following notes regarding each dressing station apply generally to all vertical systems.

Hind Leg Dressing and Foot Removal (FIGURE No. 12)

The unshackled hind leg is skinned and the hoof removed while the beast is suspended from the extension of the bleeding rail. The hook of a hoisting mechanism is secured in front of the Achilles tendon and the beast raised to allow the other leg to be freed from the shackle and dressed. The beast is transferred to the dressing rail following the completion of the work.

Platforms, approximately 6'6" (1.98m) high are required for the slaughtermen performing the hind legging and removal of feet. The platforms must be constructed from materials resistant to corrosion and should be fitted with non-slip flooring of impervious material. To avoid the risk of cross contamination between carcasses they should hang at least 5'0" (1.52m) apart centre to centre but 6'0" (1.83m) centres are preferred.

A knife sterilizer and hand wash facilities must be provided on the platforms.

The arrangement of plant should permit the immediate hygienic disposal of hooves direct to the by-products area in accordance with Condition 25 of the EEC Directive which requires:

"Condemned or seized meat, stomachs, intestines, hides, skins, horns and hooves shall be placed as rapidly as possible in special premises".

Trucks may be used to transport by-products materials but they must not be allowed to accumulate on the slaughterfloor nor come into contact with carcasses. They must be thoroughly cleansed after each time of use, before return to the slaughterfloor.

Hide Removal

EEC DIRECTIVE, ANNEX I, CHAPTER V, Clause 20 requires

"With the exception of pigs, immediate and complete skinning shall be compulsory... (Note. Complete skinning includes skinning the head!)."

The arrangement of the beef dressing line should position the carcass with its back towards the hide room entrance, so that on removal the hide may pass out of the slaughterhall avoiding the possibility of contact with its own or other carcasses.

Before removal, the back and flanks of the carcass must be flayed. This is usually a two part operation with working stations spaced at 6'0" (1.83m) centres, one on each side of the dressing rail.

Knife flaying may be supplemented by mechanised flaying tools but these must be sterilizable. Sterilizer and hand wash facilities must be provided on the platform.

Medium and large throughput slaughterhouses may install a *hide stripper or puller*. Both types of machine pull the hide from the carcass but operate on differing principles.

Hide stripper

A stripper is equipped with devices which, when attached to the fore or hind leg skin, pull the hide vertically up or down and away from the carcass. It removes the hide completely. No platform is required at the front of the carcass but the machines are usually supplied with moving platforms at each side from which operators can assist hide removal. Hand wash facilities are required for each operator and sterilizing equipment is necessary adjacent to all knifing operations. Chains must be cleansed between use on each carcass.

Hide puller

A puller has powered arms which grip the hide at each flank and exert a horizontal pull from flank to back; the final removal of the hide is a manual operation. Two static platforms are required, one facing the belly for the machine operator, and one facing the back for hide removal. Sterilizing and hand wash facilities must be convenient to the operations.

Although the stripper operation requires less rail length (14'0") (4.27m) than the puller (18'0") (5.50m) a clear headroom of 20'0" (6.10m) is needed for it when the hide is removed in an upward direction.

Brisket Sawing

This operation is best carried out with a specially designed mechanical saw.

No platform is required, but a sterilizer is needed which has sufficient depth to completely immerse the saw blade.

Evisceration (FIGURE No. 13)

EEC DIRECTIVE, ANNEX I, CHAPTER V, Clause 21 requires

"Evisceration should be carried out immediately, and concluded not later than half an hour after bleeding. The lungs, heart, liver and spleen and mediastinum may be detached or left attached to the carcass by their natural connections, if detached, they shall be numbered or identified by some means enabling them to be recognised as belonging to a given carcass; this also applies as regards the head, tongue digestive tract and any other part of the animal required for inspection. The above mentioned parts shall remain near the carcass until the inspection is concluded. In the case of all species, the kidneys shall remain attached to the carcass by their natural connections, but removed from their fatty covering".

Evisceration is a two part operation. The stomach and intestines are dropped onto an inspection table while the liver, spleen, heart, lungs,

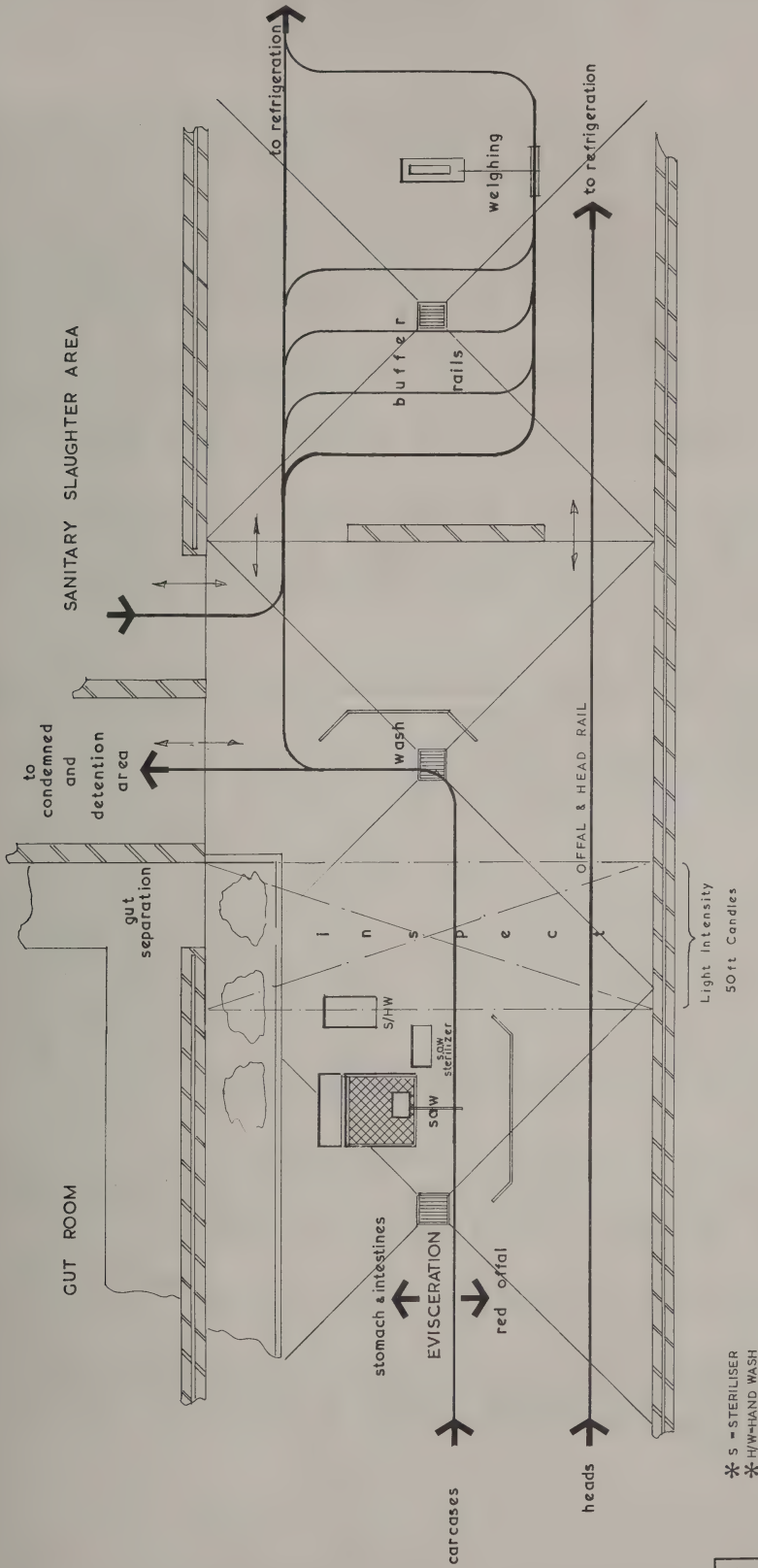


DIAGRAM OF
CARCASS/VISCERA CORRELATION FOR INSPECTION
and
THEIR SUBSEQUENT MOVEMENT

trachae, oesophagus and the thick part of the diaphragm are hung from a rail or on a carrier. Alternatively they may be placed in a separate compartment on an inspection table or conveyor.

There should be a specific area for inspection in the slaughterhall, the purpose being that sets of viscera are correlated with their carcasses until after inspection. In accordance with EEC Condition 23 carcasses must be split into sides for inspection. It follows that the calculation of gut table and offal rail length must take into account the number of carcasses that can hang between the evisceration position and the point of carcass inspection *AFTER SPLITTING*.

In an efficient layout the splitting saw will be positioned alongside the evisceration point thus allowing no room for a build up of carcasses.

The slaughtermen working at the evisceration position will require a platform approximately 3'0" (0.92m) high. This must be fitted with a knife sterilizer and handwash facilities. If a moving top evisceration table is provided on which operatives must walk, boot disinfecting facilities must be provided.

At the evisceration position the slaughtermen stand on a platform. The carcass may face either towards or away from the gut room depending on whether or not a rail turntable is used. If it faces away from the gut room the stomach and intestines must slide under the carcass, in which case a mechanical skip is necessary to bring this part of the viscera to inspection and working height.

Carcass Splitting

A powered platform is a worthwhile mechanical aid to sawing efficiency. The construction should have no dirt collecting ledges, loose pipes or paraphernalia. It should be easily cleaned and should be galvanised.

Sterilizing facilities for the saw blades must be available for use between each carcass. A shield at the front of the carcass will prevent contamination of other carcasses and offal by bone dust.

Inspection (FIGURE No.13)

EEC DIRECTIVE, ANNEX 1, CHAPTER I, Clause 1(j) requires

"Arrangements so that the Veterinary inspection prescribed in the present Directive can be carried out efficiently at any time".

Meat for home consumption produced in an EEC approved slaughterhouse is inspected and passed by the Local Public Health Department but the inspection and approval of meat destined for export to EEC countries must be supervised by a Ministry authorised Veterinarian.

The area of meat inspection should be so designed that the carcase, viscera and head are identified with each other. The inspectors movements between gut table, carcase and head and offal rail should be unimpeded if the maximum rate of slaughter is to be maintained.

The layout of the area and the rail system should permit the immediate segregation of suspect carcasses and offal to the *detained meat room*, and removal of condemned carcasses and offal direct to the *condemned meat room*.

The whole of the inspection area must be lit artificially to an intensity of 50 foot candles (540 lux) measured at eye level. If inspection is at different places each must be lit at this intensity. The artificial light used must not distort the colour of the carcasses.

Hand wash facilities and a knife sterilizing box must be provided for the inspector.

Carcase Washing (FIGURE No.13)

This is best carried out with a hand held spray gun. Therefore, the washing area should be positioned to prevent oversplash onto other carcasses or offal.

A galvanised plate shield reaching from floor to 2'0" (0.6m) above the top of the rail and approximately 6'0" (1.83m) long will form an effective barrier. The floor in this area should be laid to the necessary falls and be individually drained.

(Note. Various forms of automatic spray wash cabinet have been tried out but are not completely successful due to their inability to select certain areas for special treatment).

Further information on spraying is contained in MLC Technical Bulletin No.3 "Carcase Spraying".

Carcase Weighing (FIGURE No.13)

There are no regulations which affect this operation but it is advised that the runway system be formed in a loop around the scale to minimise the affect on throughput of any delay in weighing procedure.

PIG AND SHEEP SLAUGHTERHALL

General

EEC Conditions for Approval of Slaughterhouses, Clause (1b) requires that when pigs are slaughtered simultaneously with other species there shall be a special section for the entire process of the pig killing and dressing up to the completion of inspection. When they are slaughtered separately at a different time it is the scalding, dehairing, scraping and singeing operations (if applicable) which must be isolated from the other species and fresh meat by a wall 10'0" (3m) high or an open space of at least 16'5" (5m).

Where there are high and continuous pig throughputs, a completely separate pig slaughter line should be provided. However, the majority of slaughterhouses handle all species and a more economic use of space, equipment and manpower will be possible when pigs are slaughtered intermittently at a different time from the other species. The stunning pen, bleeding passage and part of the dressing line may then be used for either pigs or sheep provided that the pig scalding, dehairing, scraping and singeing operations are separated.

Separation by a partition wall 10'0" (3m) high is standard practice because an open space of 16'5" (5m) is usually impractical. There should be no openings in the wall between the pig dehairing section and other slaughtering and dressing areas except the animal entrance and exit. Where applicable, the entrance to the scalding and dehairing section should be fitted with sprung hinged doors of impervious materials.

Note. The following descriptions apply equally to pig and sheep operations unless stated otherwise.

Stunning and Bleeding Area

Holding pen

Because the small species are slaughtered at high hourly rates a holding pen or waiting area adjacent to the stunning pen is highly desirable. It should be sufficiently large to hold, closely confined, all the animals from one lairage pen. This pen must not be used for long term holding between slaughtering sessions unless it is equipped with water and feed facilities.

Wall to wall and wall to floor junctions must be rounded and the floor laid with falls of 2" in 10'0" (50 mm in 3m) to a drain in the pen. The floor should be non-slip and impervious and the walls must be smooth and impervious. Reference to MLC Technical Bulletin No.1 "Floors and Walls of Slaughterhouses and Meatworks" is advised. Regular cleaning is essential.

Stunning

Unless CO₂ stunning is contemplated - and this requires separate and special consideration - *Electrolethaler* tongs and *captive bolt pistols* will be used. *Electrolethaler* tongs are *not* instruments of slaughter and may be used on a pig or sheep even though other animals are in the stunning pen at the same time. *Captive bolt pistols* are slaughtering instruments however, and their use is subject to compliance with Regulation 15 (1) of the Slaughter of Animals (Prevention of Cruelty) Regulations 1958 which states "*No person shall slaughter any animal in a slaughterhouse in the sight of any other animal awaiting slaughter*".

Stunning pen

A suitable pig and sheep stunning pen will be approximately 8'0" long by 7'0" wide (2.44m by 2.13m). The stunning pen must have no direct access to the dressing area. Provision should be made for hanging *electrolethaler* tongs, saline solution, *captive bolt pistol* and ammunition, and shackles clear of the floor to avoid contamination. Bleeding shackles shall be kept clean.

The *bleeding elevator* should be positioned to leave adequate working space for animals and operatives. It should be fitted with guard plates to prevent animals becoming wedged inaccessibly between it and adjacent walls. A minimum speed for the elevator of 70 ft (21.0m) per minute is recommended to ensure the least delay in sticking and to reduce the likelihood of blood splash.

Tamped granolithic is suitable for the floor which must be laid with falls of 2" in 10'0" (50mm in 3m) to a drain within the pen. Walls must be smooth and impervious and the wall to floor junctions must be coved and wall angles rounded. Regular cleaning is essential to ensure the required standard of hygiene. (Reference to MLC Technical Bulletin No.1 "Floors and Walls of Slaughterhouses and Meatworks" is advised).

Blood trough and rail

The design of the blood trough must prevent the flow of blood into other areas. Ideally, it should be enclosed on both sides by walls, one of which has an opening about 3'0" (0.9m) wide through which the sticker works. The trough should be 3'6" to 4'0" (1.07m to 1.22m) wide and be fitted with a double drain as described in the Cattle Section, page 35 (Refer to page 50 for blood for human consumption). If blood is taken for human consumption the trough described will take the residue of blood and nasal excreta.

The minimum practical length of trough is 8'0" (2.44m). Of this, 4'0" (1.52m) is required for the sticking operation. This length is suitable for *steady* throughputs of up to 30 small animals per hour but if slaughtering is carried out in batches, the length must be sufficient for the number of animals in each batch. High and continuous throughputs require special consideration and, possibly, the use of a timed conveyor.

The *bleeding rail* should be placed 2'0" (0.6m) from any wall face. Its maximum height will vary with the species and the method of dressing. If sows or boars are slaughtered it should not be lower than 12'6" (3.8m) at the sticking position.

The blood trough may be constructed in non-corroding metal or concrete. Concrete troughs must be finished with a smooth impervious surface and all joints with walls and floor must be coved. Tiles, if laid, must be bedded in and grouted with special impervious materials.

Sheep Skin Removal

This operation is carried out in one of two ways - on the cratch or on the line. According to throughput animals may be manually or mechanically moved with either system

Clause 1(t) of the EEC Conditions for Approval of Slaughterhouses requires *"arrangements so that, after slaughter, dressing can be carried out, as far as possible, on the suspended animal"*. If the cratch system is used the equipment must be made of metal which is resistant to corrosion and it must be cleansed frequently during use.

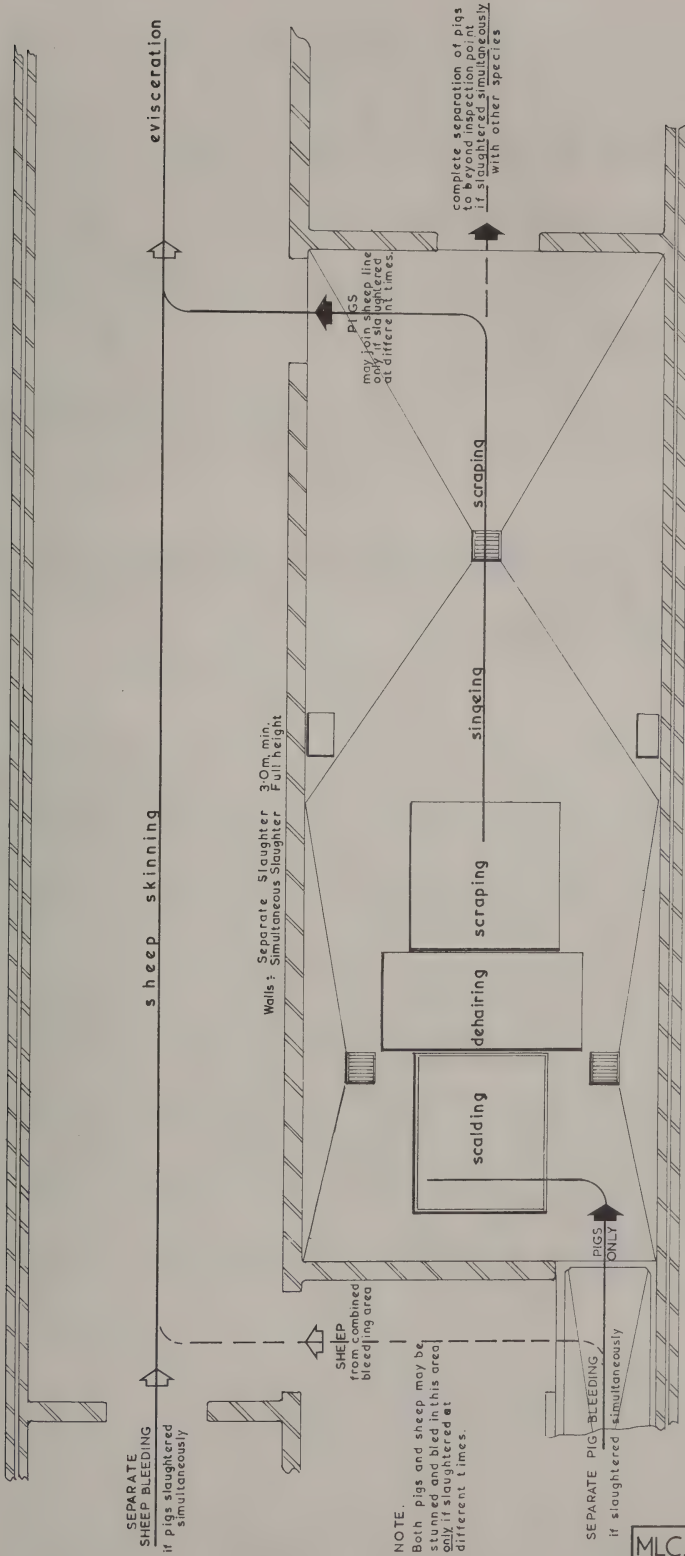
The dressing line must be of sufficient length to prevent contact between the carcasses during the whole of the dressing sequence and carcasses should be spaced accordingly.

With both systems the final removal of the skin may be either manual or mechanical and is carried out on the suspended carcass. In the manual operation an operator needs a space of at least 8'0" (2.44m) behind him to pull down the skin. The skin room or chute should be adjacent to the operation. The space required for mechanical removal will depend on the type of equipment but will not usually be less than that required for manual pulling. The skins must be removed from the slaughterhall as soon as possible. Evisceration should not take place until the skin has been removed from the carcass. The sheep head must be skinned and retained with the carcass for inspection.

Knife sterilizers and hand wash facilities must be immediately available to the slaughtermen at all stages of skin removal. Any platforms used with the line system must be made of metal resistant to corrosion, be easy to clean, and be fitted with sterilizer and hand wash facilities.

Pig Scalding and Dehairing

In a multi-species abattoir this section will be separate from the lines of other species. The movement of pigs to the section must be direct from the bleeding rail and not through other dressing areas. (see FIGURE No.14)



NOTE: The means of disposal of the byproducts of slaughter are not shown in this sketch.

DIAGRAMMATIC LAYOUT OF PIG LINE SEPARATION
IN A MULTI SPECIES SLAUGHTERHOUSE

The floor around the *scalding tank* and *dehairing machine* must be laid to falls of 2" in 10'0" (50mm in 3m) to at least one drain situated close by the emptying valve on the tank and the water discharge from the dehairing machine. Provision should be made at the scalding tank for the return of bleeding shackles to the stunning pen, preferably on a rail. The length of the scalding tank, method of pig movement and the size of dehairing machine are related to hourly throughput and are determined by the equipment manufacturer. The design of the equipment should permit easy and thorough cleansing and it is recommended that consideration be given to the use of material resistant to corrosion. Where manufacturers specify concrete floor foundation pads, these should be coved to the floor and have all internal and external angles rounded.

A knife sterilizer and hand wash facilities must be provided at the end of the dehairing line for use by operatives performing the finishing scraping procedure.

Vertical scalding

Systems for pig scalding by steam vapour or hot water sprays are in commercial use. It is proven that bacteria counts are lower and consideration should be given to these new systems when projecting high throughput pig abattoirs.

Evisceration

The equipment required to handle the viscera is similar for pig or sheep lines of related capacity. For low throughputs a table is suitable for the stomachs and intestines whilst the red offal is suspended from a fixed hook or rail. Because all parts of the viscera must remain identified with the carcass until the conclusion of inspection the rail and table must match the highest anticipated slaughter rate.

High hourly slaughtering rates demand the synchronised mechanisation of the dressing line with a viscera conveyor. For stomachs and intestines a conveyor table fitted with stainless steel trays is more easily cleaned than belt or slat units but the suspended pan and hook type of conveyor is more hygienic. The design, which allows horizontal movement in all directions, simplifies the correct disposal of viscera, after inspection, and permits some flexibility in the siting of by-products rooms. Because the conveyor is suspended the floor remains unobstructed and consequent damage to the finishes is eliminated.

A knife sterilizer and hand wash facilities must be provided at the point of evisceration.

Pig Splitting

Clause 23, Chapter V, Annex 1 of the EEC Directive requires pigs over four weeks old to be submitted for inspection cut into sides. The head shall also be split.

Pigs may be split by cleaver or mechanical saw. A sterilizer, of sufficient size to permit the complete cleaver or the saw blade to be immersed, must be provided together with hand wash facilities.

Inspection - Carcase Washing - Weighing

The requirements of these operations are similar to those set out in the cattle section, pages 42 and 43, to which reference should be made.

BY-PRODUCTS SEPARATION AND STORAGE AREA

Extracts From Relevant EEC Conditions

EEC DIRECTIVE, ANNEX 1, CHAPTER I - Conditions for the Approval of Slaughterhouses requires

- 1 (c) *Premises for the emptying and cleansing of stomachs and intestines.*
- 1 (d) *Premises for dressing of guts and tripes.*
- 1 (e) *Separate premises for the storage of unrendered fats on the one hand and of hides, horns and hoofs on the other hand, in the event of such waste products not being removed from the slaughterhouse on the day of slaughtering.*

CHAPTER V - Hygiene Conditions governing Slaughtering and Cutting

- 19. *Blood intended for human consumption shall be collected in perfectly clean receptacles. It must not be beaten by hand, but only with instruments which meet the requirements of hygiene.*
- 26. *If the blood of several animals is collected in the same receptacle, the whole content thereof shall be excluded from intra-Community trade if the meat of one of the animals concerned has been declared unfit for human consumption.*

ARTICLE 3, paragraph 2

The following are not permitted for intra-Community trade

- (e) *Blood which has been chemically treated to prevent coagulation.*

General

The by-products area must be sited, with the dispatch bay, on the dirty side of the site and it must be separated from the slaughterhall by a full height wall. Openings should be restricted to those necessary for the movement of by-product materials into and out of the area.

To ensure the maintenance of good hygiene standards, it is essential that all by-products materials, both edible and inedible, are dispatched in covered and where necessary lockable containers. The areas and containers referred to in the following text are those essential to the process. All materials should be dispatched daily. The regulations governing the dispatch of unfit meat are contained in The Meat (Sterilization) Regulations 1969 No. 871. There are no hard and fast rules for determining the size of by-products rooms which vary with the hourly slaughter rate, the degree of product treatment, the method of storage and the frequency of dispatch.

Blood Disposal

Blood is a valuable source of protein which has many uses when collected and stored hygienically. Blood discharged direct to the drainage system causes problems often resulting in high effluent treatment charges. Where possible it should be salvaged.

Edible blood

Blood for human consumption must be caught in a way which eliminates contamination. It must remain identified with the carcase until the conclusion of its inspection and it must not be touched or beaten except with instruments designed for that purpose. Subsequent storage must be in clearly identified, non-corroding containers with close fitting lids. These containers must not be used for any other purpose.

The processing of blood for the extraction of plasma must not take place in the slaughterhall but it may be undertaken in an adjacent but separate area.

Whole blood not intended for human consumption

Whole blood is commonly used by the pet food industry who usually prefer bulk collection. Special equipment should be provided which is manufactured from non-corrosible material. It is essential that regular and thorough cleaning and disinfection of the system is carried out.

Inedible blood

The collection of blood for other purposes, e.g. for feeding stuff and fertilizer use, can be achieved simply by connecting the blood trough drain direct to a vessel. A pump or pneumatic system will transfer

the blood to a tank transporter or storage tank. All tanks and vessels must be fully enclosed and they, and the interconnecting piping, should be manufactured from materials resistant to corrosion. The collection point for blood should be arranged in the dirty area.

Hide and Skin Room

Primarily intended for cooling and stacking hides and skins, this room may also be used for holding cattle feet, horns, pig hair and sheep feet pending dispatch.

The hair from pigs must be disposed of in a hygienic manner. Sufficient space must be available for the reception of these materials, where necessary, all at the same time. An area shall be set aside for cooling hides and skins prior to stacking.

The floor of the skin room must be laid with falls of 2" in 10'0" (50mm in 3m) to a drain within the room and in a way which prevents the flow of water into other areas. All floor to wall junctions must be coved and wall angles rounded.

Gut Room

The *gut room* is an area in which only the separation and rough cleaning of stomachs and intestines takes place. Further processes, such as tripe and casing dressing, must take place in separate rooms.

The gut room must be specifically laid out and equipped so that work on the raw material takes place at table height. Where cattle guts arrive at the room in trucks, i.e. from a cradle dressing system, a skip, or a lift is recommended to raise the materials onto the table. This table should be arranged so that stomachs and intestines can be separated for cleaning in different areas of the room. It should have a smooth impervious surface. The table may be made of corrosion-resistant metal, the best surface being stainless steel. It is imperative that the construction is free of cracks, crevices and areas difficult to clean. An upstand around the working edge will prevent the overflow of water and materials. The working top should be sloped to a drainage outlet which terminates approximately 2"/3" (50/75mm) above floor level and close to a drain. A sparge pipe around the table will help to keep the working surface clean.

Stomach fats

The EEC Directive requires that if stomach fats are not dispatched daily but are for human consumption they must be stored in a separate fat room. They should not be stored in static water tanks. Any washing must be by means of running water, i.e. cold water spray.

Stomachs

Stomachs will be emptied on the table through an opening leading to a manure discharge pipe which connects either directly to the drainage system or preferably to a discharge vessel. This can be of the pneumatic transfer type enabling the contents to be blown to the manure bay or to a container via an enclosed pipe. After emptying the stomachs must always be washed under running water.

(Note. It is good practice to exclude manure from the drainage system and as much as possible should be separated off at the stomach emptying position. The pneumatic system described considerably improves hygiene).

Intestines

These are rough cleaned on the table with manure discharging direct to the drainage system. Subsequent storage must be in containers with close fitting lids.

Inedible Materials

All 'dirty' materials must be placed in containers fitted with lockable lids and labelled "Unfit for human consumption".

The floor of the gut room must be laid to falls of at least 2" in 10'0" (50mm in 3m) to drains suitably located and arranged to prevent the flow of water onto other areas. The junction of walls to floors must be coved and all wall angles rounded.

Sterilizer and hand wash facilities must be provided in the gut room.

Edible Fat Room

This is a storage room where only edible fats are held awaiting rendering or dispatch. It is usually adjacent to the gut room and must be completely separated by full height walls. When cooled, fats should be dispatched in a hygienic manner.

Hand wash facilities must be provided in the fat room and if any knife work is carried out a sterilizer must also be provided.

Offal Area

After inspection offal should be trimmed and immediately placed in a chill or freezing room, in which it must be kept at a temperature not exceeding 3°C in accordance with clause 49, chapter XII of the EEC Directive. Work such as separation and trimming before refrigeration should be done in a special area near to both the inspection point and the refrigerated area.

SANITARY SLAUGHTER BLOCK

Extracts from Relevant EEC Conditions

EEC DIRECTIVE, ANNEX I, CHAPTER I, Conditions for the Approval of Slaughterhouses requires

- 1 (f) *Premises which can be locked reserved for stabling sick or suspect animals, slaughtering such animals, storing of meat found to be unfit for human consumption and of seized meat.*

ANNEX I, Chapter V, Hygienic Conditions Governing Slaughtering and Cutting.

25. *Condemned or seized meat,..... shall be placed as rapidly as possible in special premises.*

General

Whereas the home Regulations permit sick or suspect animals to be slaughtered in the main slaughterhall at a different time from other animals, the EEC Directive requires a special place. This is the only difference between the home Regulations and the Directive relating to the handling and disposal of suspect animals and their carcasses.

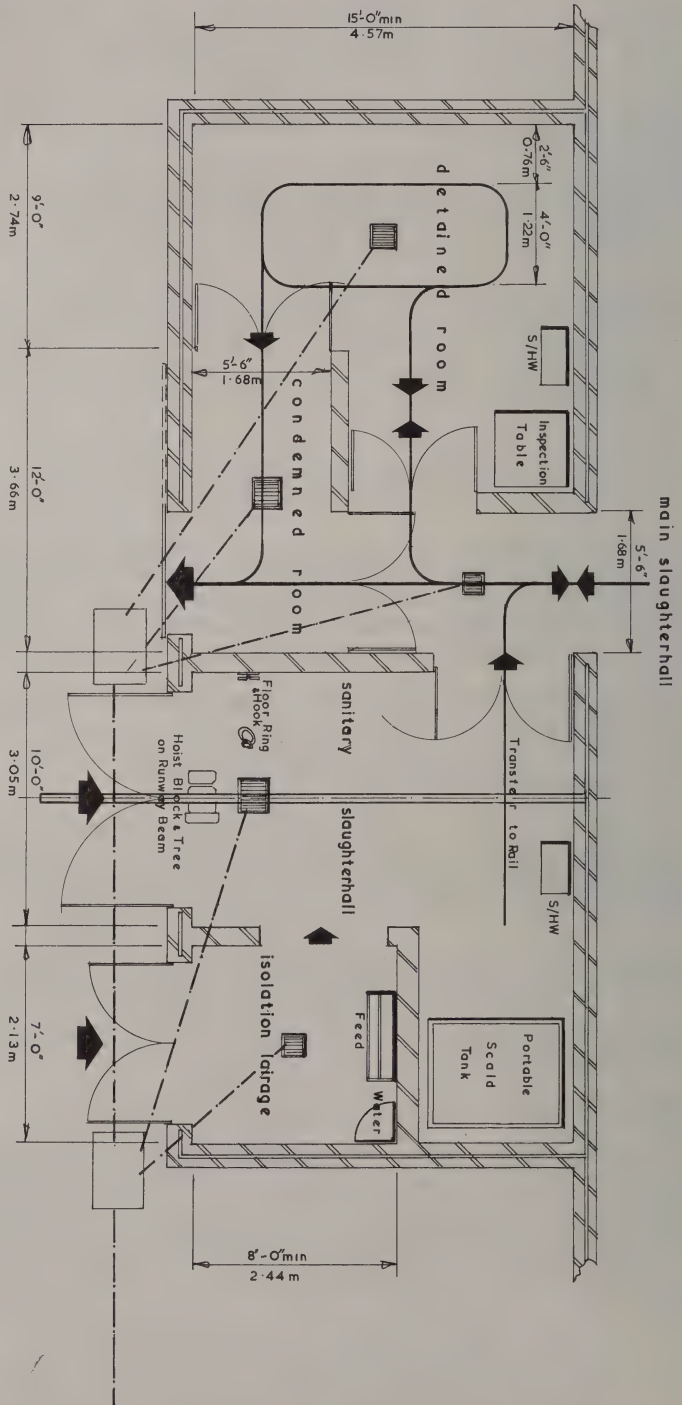
The ideal situation for veterinary requirements is that the *sanitary slaughter area* forms an annex to the main slaughterhall. The area comprises an *isolation lairage*, a *sanitary slaughterhouse*, a *detention room* and a *condemned meat room*.

If the sanitary block is a separate building a detention room must be provided next to the main slaughterhall. Meat unfit for human consumption must then be moved to the separate condemned room in lockable containers immediately following condemnation.

All doors to and from and within the area must be lockable and the keys retained by responsible management or the Inspection Service.

FIGURE No.15 indicates an ideal arrangement which allows the following movement of carcasses:

- (1) From the main slaughterhall to:- (a) Detention room
(b) Condemned meat room



NOTE

1. The Sanitary Slaughterhall dimensions are the minimum acceptable to MAFF
2. Other arrangements of rooms may be permitted.

- (2) From the sanitary slaughterhall to:- (a) Condemned meat room
(b) Main slaughterhall
(c) Detention room
- (3) From the detention room direct to:- (a) Condemned meat room
(b) Main slaughterhall

Isolation Lairage

The isolation lairage should be located adjacent to the sanitary slaughterhouse except when suitable alternative provision, which is acceptable to the Veterinary Officer, is made in the main lairage. The detailed requirements of this pen are set out on pages 18 and 19 of this bulletin.

Sanitary Slaughterhall

The Ministry of Agriculture, Fisheries and Food recommend that the size of this room, ideally, be not less than 15' x 10' (4.57m x 3.06m). They prefer 15' x 12' (4.57m x 3.66m) and it must be equipped with the following:-

- (a) Floor pulling ring in the absence of a stunning pen.
- (b) Hoist and rail system.
- (c) Cratches or cradles.
- (d) A small pig scalding tank, which may be portable; except that in smaller premises it may be acceptable to skin pigs.
- (e) Implement sterilizer and hand wash facilities.

There should be direct access to the sanitary slaughterhouse from the 'dirty' side. Only one animal should be slaughtered and dressed at any one time and immediately following its inspection the carcass and its by-products must be dealt with as directed by the Veterinary Officer in charge. Before another animal is brought into the room thorough cleansing and disinfection of the floor, walls and equipment must be carried out and it is recommended that facilities for this be permanently installed in the room. Exceptionally, the Veterinary Officer may approve the slaughter of a batch of animals in the sanitary slaughterhall.

To prevent contamination of other areas the floor must be laid with falls of 2" in 10'0" (50mm in 3m) to a drain in the room and which connects to the main system as directly as possible. Wall to floor junctions must be coved and wall angles rounded. Doors to the room must be lockable.

Detained Meat Room

Carcases which are detained for further examination, whether from the main or sanitary slaughterhall, must be placed immediately after inspection in the detained meat room. Within the room there should be an integral rail system for directing carcasses, in sequence, either to the condemned meat room or back to the slaughterhall. This rail should be at least 2'6" (0.76) from wall faces and where two rails are parallel they should be 4'0" (1.22m) apart to avoid contact between the carcasses and between carcasses and walls. Sufficient space must be available for carcase inspection and an impervious work surface approximately 3'0" square should be provided for detailed examination of meat portions and offal. An implement sterilizer and a hand wash basin with disinfecting facilities must be sited in the room.

Artificial light which does not distort the colour of the meat must be provided at an intensity of 50 ft. candles (540 lux) throughout.

To prevent the contamination of other areas the floor must be laid to falls of 2" in 10'0" (50mm in 3m). These falls should be directed to a drain within the room. This should connect to the main system as directly as possible. Wall to floor junctions must be coved and wall angles rounded. Doors to the room must be lockable.

Condemned Meat Room

This room must only be used to hold condemned meat or offal pending its dispatch. Carcasses may hang from overhead rails or be cut up for transport in lockable containers. Rails should be set 2'6" (0.76m) from the walls and door frames to avoid contact between meat and the building fabric. The containers must be of material resistant to corrosion and have closely fitting lids, they should be clearly marked "Unfit for human consumption" and used for no other purpose than holding condemned meat.

To prevent the contamination of other areas the floor must be laid to falls of 2" in 10'0" (50mm in 3m) and should be directed to a drain, within the room, which connects to the main system as directly as possible. Wall to floor junctions must be coved and wall angles rounded. Doors to the room must be lockable.

CLEANING, DISINFECTION AND STERILIZATION

Extracts from Relevant EEC Conditions

EEC DIRECTIVE, ANNEX I, CHAPTER I, Clause 1(s) requires

"In working premises, adequate arrangements for cleansing and disinfecting hands and working equipment; such equipment must be as near as possible to the working stations; the taps must be incapable of being operated by hands; such installations must be supplied with running cold and hot water, cleansing and disinfection products and hand towels which can only be used once; for the cleansing of tools, water must have a temperature of not less than 82°C".

CHAPTER III, Clause 3 requires

"The most perfect cleanliness shall be required of staff and of premises and equipment".

3 (a) *"..... Staff who have been in contact with sick animals or infected meat shall immediately carefully wash the hands and arms with hot water, and then disinfect them. Staff assigned to the slaughtering of animals, working on or handling meat, shall be obliged to wash and disinfect their hands several times during the working day and each time work is resumed.*

3 (c) *The equipment and instruments used for working on meat..... shall be carefully cleansed and disinfected several times during the working day and at the end of the day's work and before re-use after pollution, particularly by disease germs.*

6. *The use of detergents, disinfectants, and pesticides must not affect the wholesomeness of the meat".*

Cleaning, Disinfection and Sterilization

The Meat and Livestock Commission's Technical Bulletin No.4, "Cleaning of Slaughterhouses and Meatworks", gives general information on suitable types of detergents and disinfectants and how to use them. It also suggests a routine cleaning programme. The cleaning and sterilization of equipment and personnel is a continuous process and special facilities must be available.

Implement sterilization

Operators using knives, steels, cleavers and saws must have sterilizing equipment close by their work stations. At floor level it should be possible to install a sterilizing unit which conveniently serves two or more stations but platforms must be individually equipped unless

they interconnect when one sterilizer may serve two platforms. Where mechanical saws are used for carcase and brisket splitting sterilizing facilities for the saw blades must be available for use between each carcase. The sterilizing water must be kept at a temperature of at least 82°C.

Hand wash facilities

Hand wash facilities, which must be conveniently sited for all operatives, must either be connected to both hot and cold water services or a supply of warm water. Taps may only be foot, knee or photo-electric cell operated (not hand, arm or elbow) and wash water must be directed to floor level in a way which prevents splash contamination of meat, equipment and building fabric. Wash hand basins fitted with waste plugs or traps are not permitted.

Soap must be provided at all stations and nail brushes and disposable towels for use once only must be provided where required.

All sterilizing and washing equipment must be of material resistant to corrosion.

Equipment sterilization

Meat and by-products handling equipment i.e. chains, hooks, gambrels carriers, trucks and trays must be cleaned and sterilized before re-use. This is best carried out as part of a routine programme preferably in a special place. The area chosen must be adequately protected to prevent the splashing of meat or other areas. Rollers, chains, hooks and gambrels are best removed from the overhead rail system for individual treatment. Equipment used in the by-products rooms must not be brought into the slaughterhall or any part of the clean area but should be cleaned *in situ*. Water for sterilizing must be maintained at a minimum temperature of 82°C. The area for cleaning of equipment should, preferably, be separately drained.

BUILDING

Regulations

There are no specific regulations concerning buildings other than those relating to floor, ceiling and wall finishes, ventilation, lighting and drainage. These are discussed in succeeding paragraphs. The following general observations are included to suggest some means by which the required standard of hygiene may be achieved and maintained.

Building Shell

A new building could, for economy, be based on a standard concrete or steel frame structure with non-load bearing infill panels. To gain maximum advantage from one of these 'system buildings' the roof supporting columns should be able to sustain the loads of the runway and equipment supporting steelwork - either directly or by the use of secondary stanchions. Additionally, if a split level slaughterhouse design is contemplated, a system must be chosen which permits a floor to be added to one side of the building at a height of approximately 12'0" (3.66m).

Most standard building manufacturers produce a varied range of styles to meet the demands of the largest possible market. The type most suited to slaughterhouse needs is based on a Portal Frame design which comprises a pitched roof supported on columns generally set at 15'0" (4.5m) centres along the building. The varied widths available range between approximately 20'0" and 60'0", (6.1m and 18.3m) well within the requirements of an average slaughterhouse. Heights also vary but usually attain the 20'0"/24'0" (6.10m and 7.32m) needed to provide sufficient headroom for cattle bleeding and dressing provided that a steeply pitched roof design is chosen.

Whether the building be a standard or purpose built structure the most economical spacing of supports along the building for the internal equipment steelwork is 15'0" (4.6m). These supports, either stanchions or piers, are wider than the walls and therefore project. It is preferable that these projections are on the outside of the building to attain an uncluttered and easily cleaned internal wall surface.

The roof space should be as open as possible without dirt collecting ledges. Pitched roofs of not less than 22° , give good ventilation and also provide space for high level slaughtering equipment and water storage tanks.

Roof

A pitched roof is advised for standard or purpose built structures to facilitate installation of economical ventilation. To reduce condensation the roof must be insulated and this is achieved simply with an air cavity between two layers of sheeting. Further insulation is only necessary in exposed areas but, if provided, it must not absorb moisture. The internal surface of the roof must not encourage the growth of mould, harbour dust or be subject to flaking. There should be no exposed wooden structures. The construction of roof supporting members should be simple without dust collecting members.

Windows

If opening windows are incorporated they should be fitted, on the outside, with screens to prevent the entry of birds or insects. Window frames must be of impervious non-corroding materials and the

sills and the tops of short or half walls should be sloped at 45° to prevent the accumulation of dust and their use as shelves. Modern practice favours no windows.

Doorways

Access openings for rail hung carcasses should if possible be not less than 4'0" (1.22m) wide for pigs and sheep and 5'0" (1.52m) wide for beef. If rail carriers or trucks are used it is advised that the edges of doorways be protected. Doors and door frames must be of, or covered with, impervious non-corroding materials.

Floors and Walls

EEC DIRECTIVE, ANNEX I, CHAPTER I, CLAUSE 1(m) requires

"In premises where meat is handled:

- Flooring of waterproof material, easy to cleanse and disinfect and rot-proof, sloping slightly, with an appropriate system for running off liquids to drains fitted with traps and gratings;*
- Smooth walls, covered up to a height of at least 3 metres with light, washable paint, and with rounded angles and corners".*

(Note. The England and Wales and Scotland regulations demand the more rigorous standards of impervious wall surfaces.)

Detailed information on the characteristics of various suitable materials will be found in the Meat and Livestock Commission's Technical Bulletin No.1 "Floors and Walls of Slaughterhouses and Meatworks".

Slaughterhall finishes, especially in the stunning and bleeding areas, are subject to hard wear and tear, chemical erosion by blood, fat and acids, high humidity and, during the clean up period, high temperature shock.

Floors

The floor in particular is constantly saturated. It follows that even the most expensive finish will fail, if it or any joints are not imperviously sealed. It is better in the long run to use high quality materials rather than suffer the inconvenience and cost of continual maintenance of cheap or poorly applied finishes. The advice of specialist anti-corrosive material manufacturers should be sought and heeded. A good floor should have, in addition to its anti-corrosive properties, a non-slip surface. The junctions of floors to walls and to concrete plinths must be coved. All floors must be laid with falls of 2" in 10'0" (50mm in 3m) to drains suitably located and in all cases so constructed as to prevent the flow of effluent between rooms.

(Note. The construction of the upper floors of a multi-storey or split level slaughterhouse must incorporate a waterproof membrane which guarantees complete impermeability).

Walls

These must have smooth, impervious surfaces to a height of 3 metres (10'0"). They should be light in colour to reveal contamination and all angles and corners must be rounded. Finishes applied to the walls must be washable. 'Washing' implies the use of hot water or steam and the probable use of brushes and abrasives. Manufacturers should, therefore, be pressed for a guarantee that their products will withstand this treatment for a reasonable period. Where walls are subject to impact damage, protection in the form of non-corrosive metal or plastic sheeting may be applied. Whatever method of fixing to the wall is adopted all joints and edges must be imperviously sealed.

Drainage

EEC DIRECTIVE, ANNEX I, CHAPTER I, Clause 1(r) requires

"Arrangements for draining off residual water in accordance with hygienic requirements".

In new buildings drains from the slaughterhall and by-products areas should have a minimum diameter of 6" (150mm). They should connect directly to the sewer or pretreatment plant on the 'dirty' side of the site, and they should be routed separately from those originating in the storage and manufacturing areas. Floor inlets to the drains must be trapped. If bucket traps are installed they must be large capacity units and be regularly cleaned to be of practical benefit. Large robust drain inlets set out in a grid pattern are preferable to grated channels.

Inlets to drains should be positioned close by any operation where water is regularly used (i.e. carcase washing, scalding tank and de-hairer), and at regular intervals along the slaughterline to contain floor contamination within a limited area.

Lighting

EEC DIRECTIVE, ANNEX I, CHAPTER I, Clause 1(o) requires

"In premises, where meat is dressed and handled, adequate natural or artificial lighting which does not distort colours".

Natural light

Neither the EEC Directive nor the home Regulations specifically demand the provision of natural light. The Slaughterhouses (Hygiene) Regulations 1958 state a preference for meat inspection to be carried out by daylight - *where reasonably practical*.

Daylight, the intensity of which varies continually, cannot be introduced into a building to provide overall illumination of constant value. In slaughterhouses, the overhead rail system and equipment is a barrier to natural roof lighting and the light from the windows is only sufficient at close quarters. At best, daylight can only supplement artificial light and its provision, if at all, is a matter of doubtful value. Modern practice favours no windows.

Artificial light

This must be provided, to satisfy home Regulations, at an intensity of not less than 20 ft. candles (220 lux) except where meat inspection takes place when the intensity must be raised to not less than 50 ft. candles (540 lux) at *all points of inspection*. Fluorescent lamps should be chosen which do not distort the colour of meat. These should preferably be positioned at rail height to obtain maximum illumination. The measurement of intensity should be taken at a height of approximately 4 ft (1.2m) from floor level. Tubes or bulbs should be enclosed in vapour proof covers to guard against corrosion and to prevent spoilage of meat in the event of lamp breakage.

Ventilation

EEC DIRECTIVE, ANNEX I, CHAPTER I, Clause 1(n) requires

"Adequate ventilation and vapour extraction in premises where meat is dressed and handled".

The heavily saturated atmosphere of a slaughterhouse demands a high level of vapour extraction. For economy this should, if possible, be obtained by natural means. Several specialist manufacturers design and supply systems, based on convection principles, for incorporation into sloping roofs. (It is essential that the specialist be well versed in slaughterhouse problems). For these to operate efficiently the slaughterhall must be sited so that outside air may enter the building along a major part of at least one side wall. Where this is impossible specialised mechanical extraction will be required.

Flat roofs for slaughterhouses - particularly of concrete - should be avoided because the problems of ventilation and condensation can, usually, only be solved with expensive equipment.

The level of ventilation is not specified but the system should be based on the principle of a large volume of air moving slowly throughout each area. High velocity air movement must be avoided.

All ventilation equipment must be resistant to corrosion and air inlets and outlets must be fitted with screens to prevent the entry of birds, insects and rodents.

Equipment

All equipment should be of impervious non-corroding materials. The overhead rail system and support steelwork ought to be hot dipped galvanised *after* manufacture. Painting is not recommended. Platforms, tanks, tables and all mechanical equipment should, where practicable, be galvanised or of non-corrosible metal. Stainless steel should be used where possible. Unacceptable materials or base materials for slaughterhouse use are lead, cadmium, enamel-ware, porcelain and copper (copper may be used for water pipes). Paint, where used, must be of a type which will not flake.

Floor and wall mountings should be kept to a minimum and fixing bolt holes should be sealed with an impervious mastic. Areas of direct contact between equipment and building finishes should also be sealed. Working platforms supported by a single column are preferred to those with ledged and braced legs in each corner - unless they are free standing. Legs of free standing platforms and tables should be designed to minimise the possibility of damage to the floor finish.

Equipment must be designed and constructed so that:-

- (a) All parts may be easily cleaned and disinfected.
- (b) Inaccessible crevices, ledges, angles and pockets are eliminated.
- (c) Welding runs are continuous and smooth.
- (d) Galvanising is free from imperfection, continuous and smooth.
- (e) Cover plates can easily be removed - preferably without tools.
- (f) All parts are free draining.
- (g) Materials remain unaffected by water, steam, detergent, disinfectants, fatty acids and blood.
- (h) Lubricating oil and grease cannot contaminate meat.

Services

Water, steam, electrical and air service piping should be routed over the runway supporting steelwork and branch connections brought down where required. Services buried in the floor and in walls corrode where they emerge for fittings. Exposed services are more easily altered and repaired but consideration should be given to clean and logical routing, if necessary in trunking, to avoid the formation of dust traps.

The main electrical control gear for machinery should, preferably, be grouped in an area where it will be protected from water and steam and easy to maintain. Low voltage, hand operated switch gear adjacent to, or on, machines should be waterproof. Electric motors should be specially chosen to suit slaughterhouse conditions and may in certain cases need to be waterproof.

In view of the special conditions, electrical engineers concerned with slaughterhouse construction should consult with the Meat Plant Advisory Service of the MLC and the Home Office Inspector of Factories.

IV. REFRIGERATED STORAGE AND GENERAL AMENITIES

REFRIGERATED STORAGE AREA
(CHILL ROOMS)

Extracts from Relevant EEC Conditions

EEC DIRECTIVE, ANNEX I, CHAPTER I - Conditions for the Approval of Slaughterhouses requires

1 (g) *Adequate refrigeration rooms.*

ANNEX I, CHAPTER XII - Storage

9. *Fresh meat for intra-Community trade shall be chilled immediately after the post mortem inspection and kept permanently at an internal temperature lower or equal to 7°C for carcasses and joints, and at 3°C for offal.*

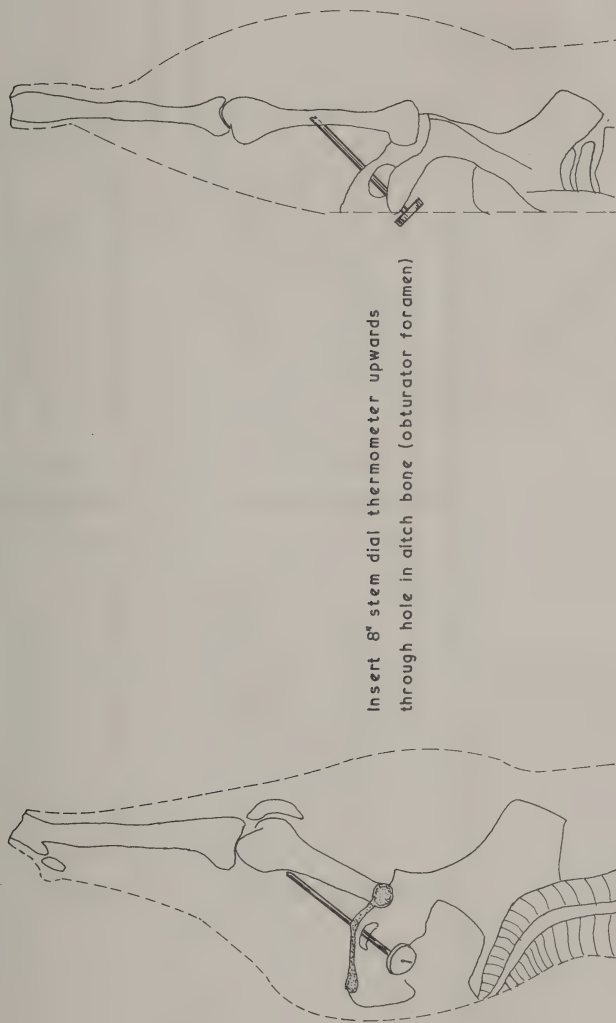
General

The refrigerated area, which forms the link between slaughter and dispatch, will comprise in its simplest form chill rooms for carcasses and offal, but can also include a cutting area with storage for joints or cuts, a freezer and sub-zero storage.

All meat intended for intra-Community trade must proceed immediately after post mortem inspection to a refrigerated section linked to the slaughterhall by an overhead rail *within the building*. In this section carcase meat must be chilled to and held at a temperature no higher than 7°C (45°F). Offal must be held at a lower temperature of 3°C (37°F). It is necessary that the specified temperatures are achieved quickly to prevent bacterial attack and spoilage. With one exception, meat must not be dispatched or cut until the prescribed temperatures are reached. The exception relates to hot cutting immediately after slaughter. The resultant joints must, however, be chilled prior to dispatch.

Measurement of temperature

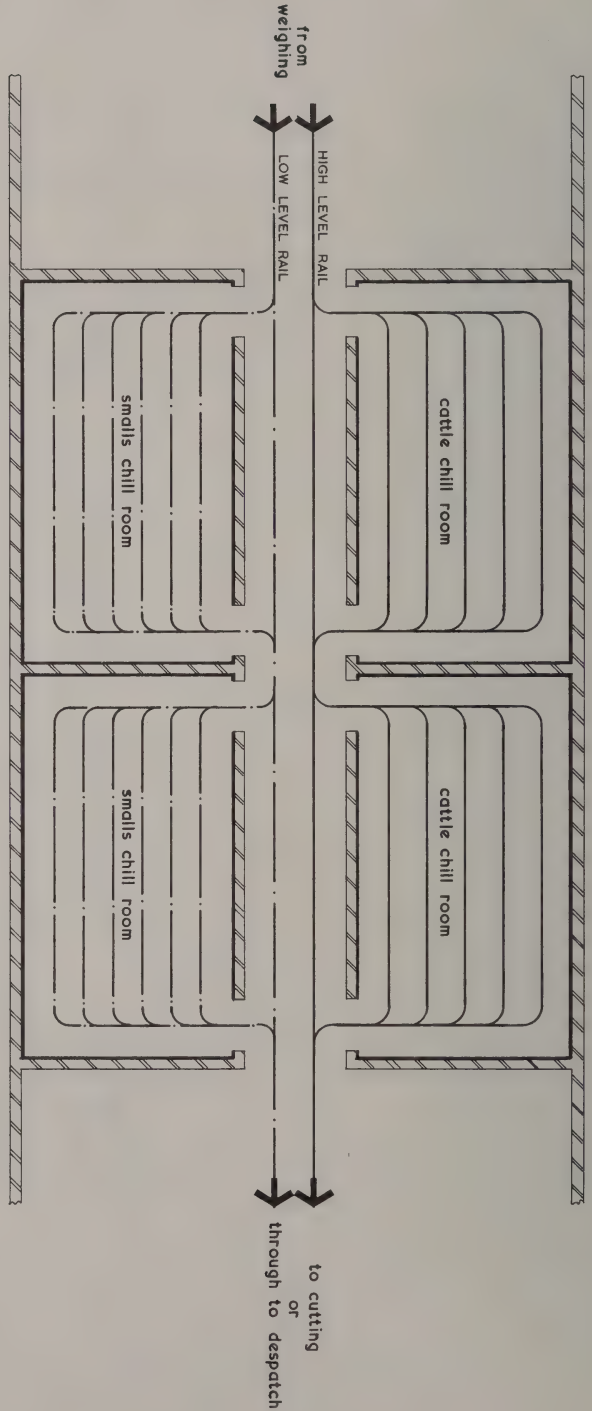
It is emphasized that the temperatures specified are those of the meat. Carcase temperature is measured by a probe thermometer at bone depth against the neck of the femur in what is generally known as the "deep round". FIGURE No. 16 shows the precise location.



Insert 8" stem dial thermometer upwards
through hole in ditch bone (obturator foramen)

DEEP ROUND TEMPERATURE MEASUREMENT IN BEEF CARCASE

MLC, FIG. No. 16



note:
coolers can either be floor,
ceiling or wall mounted for
which allowance must be made

Chill Rooms (see FIGURE No.17)

With such time variations it is advisable to chill each species either in separate rooms or at different times with different schedules and air temperatures. Large establishments are often equipped with single species rooms but it is general practice in many slaughterhouses to balance the kill so that common use may be made of some chill rooms. In these circumstances control of the refrigeration cycle is essential to ensure the correct rate of heat extraction for the species.

It is recommended that two groups of rooms are provided, one set equipped with high level rails for beef and the other with low level rails for pork and/or lamb carcasses. This specification is reinforced as the requirements of the Directive infer a continuous movement of carcasses from the slaughterhall into the chill rooms. A number of small rooms in each group will reduce the period during which chill room doors remain open, speed up chilling, lessen the possibility of meat spoilage owing to the mixing of hot and cold carcasses and facilitate the simultaneous loading of rooms and dispatch of chilled meat.

Generally individual chill rooms should be sized to suit the throughput of the slaughter lines during a period of approximately two hours. Rooms for very high output lines require special consideration.

Chill room sizes

For optimum plant performance rooms should preferably be rectangular with a width to length ratio of 1:2, i.e. 15' x 30', 20' x 40', 25' x 50' with a maximum length of 50'0".

Carcase and rail spacing

Carcasses must hang so that there is sufficient space to allow air to circulate freely. The table below summarises the minimum carcase and rail spacing. Ideally there should be a gap of at least 1½" (37 mm) between carcase surfaces.

	Between rails		Minimum between carcasses along the rails
	Minimum	Desirable	
Beef	2'6" (0.9 m.)	3'0" (0.9 m.)	1'3" per side (0.37 m.)
Pigs	1'6" (0.46m.)	2'3" (0.7 m.)	1'3" per carcase (0.37 m.)
Lambs	1'6" (0.46m.)	1'6" (0.46m.)	1'0" per carcase (0.3 m.)

Rail support system

A steelwork grid within the room is the standard method for supporting the carcass hanging rails. Simple to engineer and economical on first cost the system can result in inefficient chilling if large beams are placed across the line of air flow causing a disturbance and possibly drop in velocity. Co-operation between the steelwork and refrigeration engineers is essential to ensure an efficient chilling system. A further disadvantage of steelwork grids within chill rooms is the possible contamination of carcasses from condensation drip during the first hours of chilling. These disadvantages can be offset by placing the steel grid above the insulation, but the rail hangers must be insulated above the main insulation and be securely braced to prevent vibration damage.

A new reinforced concrete ceiling offers the possibility of using tubes (known as inserts) which are set into the concrete at the time of pouring. The rail hangers are subsequently attached to the inserts thus providing a clear space above the rail for unobstructed air movement. This system is excellent but does require the utmost care and accuracy of the builder placing the inserts.

Doors

The home Regulations and the EEC Directive forbid the use of exposed timber. Doors and frames should be of impervious materials such as stainless steel, aluminium or reinforced plastics. Doors may be single or double hinged or sliding. If hinged they should open outwards from the room and fold flat against the outside wall to avoid causing an obstruction. Allowances must be made for door thickness when rail to wall clearances are determined.

For congested areas manual or mechanically operated sliding doors are available.

Internal finishes

Although chill rooms should not be subject to extreme wear and tear the peculiar environment demands an impervious surface overall. Suitable covering for the wall and ceiling insulation includes galvanised steel, stainless steel and aluminium sheeting. All seams must be imperviously bonded and special cove and wall junction pieces fitted to ensure compliance with the demands of the Directive for all wall angles to be rounded and wall to floor junctions coved.

Floors are usually constructed with a granolithic screed laid direct to a concrete base. Floor insulation is usually unnecessary unless the refrigeration plant is designed to operate at temperatures at or below 0°C (32°F). The floors of refrigerated rooms at first floor level or above should be insulated, regardless of the operating temperature.

CUTTING ROOMS

The subject of *cutting rooms* is beyond the scope of this bulletin but the following brief comments will assist those intending to include facilities within the slaughterhouse complex.

A cutting room, even if it is an integral part of an approved slaughterhouse is subject to separate conditions, inspection and approval. The special conditions are contained in Chapters II, VII and VIII of the Directive. With respect to the services, building, equipment and hygiene, they are similar to the slaughterhouse conditions.

Condition 34, Chapter VII of the Directive states "During the cutting up, the temperature of the building must not exceed 10°C (50°F)". *Meeting this condition is fundamental to the granting of export approval.* This temperature can be met and held only through the use of refrigeration equipment which circulates cooled air around the room. For the maintenance of a comfortable working environment it is desirable to move a large volume of air *slowly* and it is recommended that the maximum air velocity is restricted to 50 feet per minute measured at operator head height. The room should, if possible, have an un-restricted height of at least 4.25 m (14'0"). Any reduction of this measurement will, progressively, lead to the creation of an unpleasant wind tunnel effect which can only be countered by the use of special equipment.

To ensure efficiency in operation, access doors to the room should be kept to a minimum. They should, preferably, be airtight and remain closed when not in use. A thermometer must be installed, in addition to equipment heat sensing devices, to provide visual evidence of room temperature.

A separate cold store for cuts, which maintains a meat temperature no higher than 7°C (45°F), should be provided unless frozen storage is included.

Film packaging may proceed where meat is cut, but packing into cartons or boxes must take place in a separate place. Packaging materials must be stored elsewhere than in the cutting room or meat storage areas.

Toilet and changing room facilities (which must not open directly on to the cutting room) should be provided for the exclusive use of the cutting staff.

FRESH MEAT DISPATCH AREA

This area must be sited away from any dirty part of the slaughterhouse and access to it restricted to meat vehicles only. The EEC hygiene standards extend to adjacent roadways and vehicle standing areas and these must be surfaced and drained to prevent contamination of meat by dust, spray and water splash. The floor of the loading dock should, preferably, be at tailboard height, approximately 4'0" (1.22m). Dock levellers are available to assist loading from docks which are lower. The dispatch bay must be covered. The roof should extend at least 6'0"/8'0" (1.8 /2.4m) forward of the loading points to cover the rear end of vehicles. Ideal conditions at a loading dock provide for the isolation of each vehicle within an air conditioned environment.

Meat awaiting dispatch must not stand on the loading dock. Further, it is undesirable for chill rooms to open directly onto the dock. Ideally, the chill rooms should be served by passageways which then connect with the dock via lockable doors set in a full height wall.

The whole of the dispatch bay must be secure against entry by unauthorised persons. It must also be proof against rodents, dogs, cats and birds.

The floor of the dock must be laid with falls of 2" in 10'0" (50mm in 3m) to a drain in a way which prevents overflow of water onto the standing area.

Walls must be smooth and impervious to a height of 3m (10'0") with wall to floor junctions coved and wall angles rounded. Every effort must be made to construct for easy cleaning.

GENERAL AMENITIES

Extracts From Relevant EEC Conditions

EEC DIRECTIVE, ANNEX I, CHAPTER I - Conditions for the Approval of Slaughterhouses requires

- (h) *Suitable quarters which can be locked, for the exclusive use of veterinary service; a room equipped for carrying out a trichinoscopic test, when such a test is compulsory;*
- (i) *Cloakrooms, wash basins and showers; water closets, the latter not opening directly onto the working premises, the wash basins must be provided with hot and cold water, arrangements for cleansing and disinfecting the hands, and hand towels for use once only; the wash basins must be adjacent to the water closets;*

CHAPTER III - Hygiene of Staff, Premises and Equipment in Slaughterhouse and Cutting Rooms.

3. *The most perfect cleanliness shall be required of staff and of premises and equipment:*
 - (a) *staff shall in particular wear working clothes and appropriate headgear, with, where necessary, protection for the back of the neck.....*

General Amenities

These areas comprise staff entrance, locker rooms, toilets with washing facilities, showers, mess rooms, offices and if conveniently situated to the slaughterhall, the inspectors' offices (veterinary and public health).

Both the home Regulations and the EEC Directive forbid direct access between meat working and storage areas and the toilets, showers, cloak rooms and mess rooms. In practice it is best for these to be separated by a passageway which permits individual access to the slaughterhall, the refrigeration area and the dispatch bay.

Slaughterhouse entrance

Clause 3(a), Chapter III of the Directive requires staff to wear protective clothing. In fact, *ALL* persons in the meat working and storage areas must be adequately clothed, including visitors.

Entry to the building must be controlled to ensure compliance with this requirement and a special entrance provided, preferably linked to the working areas via the changing rooms.

Minimum protective clothing comprises, washable head wear, and an overall or long coat together with rubber footwear.

Locker rooms

These must be provided and equipped, for both sexes if necessary, in accordance with the requirements of the Factories Act. They should be sited so that staff pass through them on entry and exit from the building.

The maintenance of hygienic conditions should extend into this area. and it is preferable that the floor and walls have impervious surfaces which are easily cleaned and wall angles rounded and wall to floor junctions coved.

Toilets and washing facilities

A sufficient number of water closets and wash hand basins must be provided, for both sexes if necessary, to meet requirements of the Factories Act. Provision is based on a sliding scale of approximately one W.C. and wash basin for every 15 males or females.

The wash hand basins must be adjacent to the water closets. They must be provided with hot and cold water, or water at a temperature suitable for hand washing, soap and nail brushes. Disposable hand towels, which can be used once only, must be provided. Roller towels and hot air hand dryers are not permitted.

Showers, provided with hot and cold water or water of a suitable temperature, are also required for both sexes at the rate of one to 25 persons.

The floors and walls of the whole area should have impervious surfaces which are easily cleaned. All sanitary conveniences must be kept clean and maintained in efficient working order.

Home Regulations demand that a notice be displayed near every sanitary convenience requesting users to wash their hands after using the convenience.

Mess room

A mess room should be provided in which staff may rest and eat during meal breaks. Facilities should be available for boiling water, washing up and crockery storage. The internal finishes and all furniture should be easy to clean and be kept clean. Hygiene standards in this area should be no less than in the working areas.

Inspectors' offices

Accommodation must be provided for the exclusive use of the Veterinary Inspector and also the meat inspection staff of the Local Authority. Both of these rooms must be furnished and fitted with lockable doors. They should be provided with hand wash facilities and should have access to shower facilities. Laboratory facilities may also be required. It should be noted that the EEC Directive specifically requires a room equipped for carrying out a trichinoscopic test when such a test is compulsory.

If possible the rooms should be sited adjacent to the area of inspection but they may be incorporated in an annex to the slaughterhouse or on a floor above. In either case, access to the inspection area should be easy and direct.

APPENDIX

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SCOTLAND	ENGLAND AND WALES	EUROPEAN ECONOMIC COMMUNITY
<p style="text-align: center;"><u>LAIRAGE</u></p> <p>The Slaughter of Animals (Prevention of Cruelty) (Scotland) Regulations 1955 No. 1993 (S.151) unless noted otherwise. <u>CONSTRUCTION</u></p> <p>PART II</p> <p>Construction and equipment of slaughter-houses and knacker's yards</p> <p>Reg. 3 The occupier of a slaughter-house or knacker's yard shall ensure -</p> <p>(a) that the lairage therein is -</p> <p>(i) adequate in size and construction for the number of and kind of animals confined therein;</p> <p>(ii) so constructed as to provide shelter from the sun and from adverse weather for all animals confined therein;</p> <p>(iii) kept in good repair;</p> <p>(iv) so constructed as to enable the floor to be properly drained and cleaned;</p> <p>(v) fitted with drinking troughs, racks, mangers or other similar equipment adequate in number and size for the watering and feeding of all animals confined in the said lairage, and so constructed and placed that they can readily be filled and cannot readily be fouled;</p> <p>(vi) adequately ventilated; and</p> <p>(vii) adequately lighted for the proper conduct of all operations therein:</p> <p>(b) that any field which is used in connection with the slaughterhouse or knacker's yard and in which any animal awaiting slaughter is confined contains adequate drinking facilities for such animal:</p> <p>(c) that the surface of any part of the slaughterhouse or knacker's yard over which any animal awaiting slaughter has to pass is so constructed and so kept as to minimise the risk of the animal slipping thereon and in particular that such surface is sanded in frosty weather:</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>The Food (Preparation and Distribution of Meat) (Scotland) Regulations 1963 No. 2001 (S108)</p> <p>Reg. 9 (2) In any part of the lairage which is enclosed (including any part having a roof covering only) for the shelter or protection of animals, adequate artificial lighting to enable inspection of the animals to be made in it shall be provided.</p> </div>	<p style="text-align: center;"><u>LAIRAGE</u></p> <p>The Slaughter of Animals (Prevention of Cruelty) Regulations 1958 No. 2166 unless noted otherwise. <u>CONSTRUCTION</u></p> <p>PART II</p> <p>Construction, lay-out and equipment of slaughterhouses and lairages</p> <p>Reg. 3 The occupier of a lairage shall cause the following requirements to be complied with -</p> <p>(a) The lairage shall be suitable for its purpose and adequate in size and construction for the number of animals laired therein.</p> <p>(b) The lairage shall be so constructed as to provide shelter from the sun and adverse weather for every animal laired therein.</p> <p>(c) The lairage shall be so constructed, and the floor thereof so channelled, as to enable it to be thoroughly cleansed.</p> <p>(d) The lairage shall be provided with adequate racks, mangers or other suitable equipment to contain food, and with adequate drinking troughs, for all animals laired therein; such racks, mangers, equipment and troughs to be fixed if reasonably practicable.</p> <p>(e) The lairage shall be adequately ventilated and shall be adequately lighted for the proper conduct of all operations therein and to enable these regulations to be complied with.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>The Slaughterhouses (Hygiene) Regulations 1958 No. 2168</p> <p>PART II</p> <p>Reg. 4 The arrangement of the lairage shall be such that animals diseased or suspected of being diseased may be kept apart from other animals.</p> </div>	<p style="text-align: center;"><u>LAIRAGE</u></p> <p>E.E.C. Directive ANNEX 1, CHAPTER 1</p> <p>1(a) <u>cond</u>: Adequate lairage for lodging the animals.</p> <p>1(v) Appropriate arrangements for protection against intruding creatures such as insects, rodents etc.</p> <p>1(w) Tools and materials, in particular containers, of material resistant to corrosion and easy to clean and disinfect.</p>
<p style="text-align: center;"><u>ANTE MORTEM INSPECTION</u></p> <p>NO SPECIFIC REQUIREMENT</p>	<p style="text-align: center;"><u>ANTE MORTEM INSPECTION</u></p> <p>NO SPECIFIC REQUIREMENT</p>	<p style="text-align: center;"><u>ANTE MORTEM INSPECTION</u></p> <p>ANNEX I CHAPTER IV</p> <p>Cond: 14. Animals shall be subjected to an ante mortem inspection on the day of their arrival at the slaughterhouse. This examination shall be repeated immediately before slaughtering if the animal has been stabled for more than 24 hours.</p>

SCOTLAND	ENGLAND AND WALES	EUROPEAN ECONOMIC COMMUNITY
<p style="text-align: center;"><u>WATER & FEED</u></p> <p>PART III</p> <p>Reg. 5 Any person having for the time being the care of any animal in a lairage shall ensure -</p> <p>(a) that a sufficient supply of wholesome water is made available to the animal on arrival at the lairage and at all times thereafter while awaiting slaughter; and</p> <p>(b) that a sufficient quantity of wholesome food is made available to the animal on arrival at the lairage and twice daily thereafter until slaughtered, provided that no animal need be fed within twelve hours before the time at which it is slaughtered.</p>	<p style="text-align: center;"><u>WATER & FEED</u></p> <p>PART III</p> <p>Conditions to be observed in lairages</p> <p>Reg. 6 The occupier of a lairage shall cause every animal on arrival in the lairage and at all times while awaiting slaughter to be provided with a sufficient quantity of wholesome water.</p> <p>Reg 7 (1) When it is necessary to confine in a lairage any animal for a period exceeding twelve hours, the occupier of the lairage shall cause the animal to be provided with a sufficient quantity of suitable food in each morning and each afternoon during which it is so confined (including that in which it is brought into confinement):</p> <p>Provided that no person shall be liable for a contravention of the foregoing provision -</p> <p>(a) in the case of any animal, by reason of its not having been fed in the morning or afternoon in which it is slaughtered; or</p> <p>(b) in the case of an animal, other than a horse, which is slaughtered for butcher's meat, or as to which it is proved that it was intended that it should be so slaughtered, in any morning or afternoon, by reason of its not having been fed in the preceding afternoon, or in the preceding morning, as the case may be; or</p> <p>(c) in the case of a horse which is slaughtered for butcher's meat, or as to which it is proved that it was intended that it should be so slaughtered, in any afternoon, by reason of its not having been fed in the preceding morning.</p> <p>(2) In this regulation the expressions "morning" and "afternoon" mean the periods of twelve hours ending and beginning respectively with midday; and consecutive periods of confinement shall count as one continuous period.</p> <p>Reg. 8 No person shall deposit or cause to be deposited any fodder in a lairage otherwise than in the racks, mangers or other suitable equipment provided for the purpose.</p>	<p style="text-align: center;"><u>WATER & FEED</u></p> <p>PART III</p> <p>NO SPECIAL CONDITION</p>
<p style="text-align: center;"><u>HYGIENE & BEDDING</u></p> <p>PART III</p> <p>Reg. 4 The occupier of a slaughterhouse or knacker's yard shall ensure -</p> <p>(a) that so far as is practicable the lairage is kept clean; and</p> <p>(b) that offal or refuse from the slaughterhall is not deposited in the lairage.</p> <p>Reg. 6 Any person having for the time being in a slaughterhouse or knacker's yard the care of any animal which is not to be slaughtered on the day on which it arrives at the slaughterhouse or knacker's yard shall ensure that the animal is provided with suitable bedding.</p>	<p style="text-align: center;"><u>HYGIENE AND BEDDING</u></p> <p>PART III</p> <p>Reg. 9 The occupier of a lairage shall cause -</p> <p>(a) suitable bedding to be provided in the lairage for animals held therein overnight;</p> <p>(b) the lairage to be kept clean.</p> <div style="border: 1px solid black; padding: 2px;"> <p>The Slaughterhouses (Hygiene) Regulations 1958 No. 2168</p> <p>Reg. 25. The occupier of every slaughterhouse shall</p> <p>(h) cause any lairage to be kept thoroughly clean.</p> </div>	<p style="text-align: center;"><u>HYGIENE AND BEDDING</u></p> <p>PART III</p> <p>NO SPECIAL CONDITION</p>

SCOTLAND	ENGLAND AND WALES	EUROPEAN ECONOMIC COMMUNITY
<p><u>USE OF FIELDS AS LAIRAGE</u></p> <p><u>Reg. 7</u> No person shall -</p> <p>(a) keep animals in a lairage, or in a field used for keeping animals awaiting slaughter, in such numbers as to cause suffering to the animals.</p> <p>(b) keep in a field any animal awaiting slaughter, when the weather or the state of the field is likely to cause suffering to the animal.</p>	<p><u>USE OF FIELDS AS LAIRAGE</u></p> <p><u>Reg. 11</u> No person shall keep in a field any animal awaiting if the weather or the condition of the field is likely to cause suffering to the animal.</p> <p><u>The Slaughterhouse (Hygiene) Regulations 1958 No. 2168 Part IV</u></p> <p>19A (i) In this regulation 'lairage' means any covered lairage forming part of a slaughterhouse used for the confinement of animals awaiting slaughter there, but does not include any field pasture or other open lairage forming part of any slaughterhouse or otherwise</p>	<p><u>USE OF FIELDS AS LAIRAGE</u></p> <p>NOT PERMITTED</p>
<p><u>HORNED OR FRACTIOUS ANIMALS</u></p> <p><u>Reg. 8</u> The occupier of any slaughterhouse or knacker's yard shall ensure that within the lairage -</p> <p>(a) animals of one kind are kept apart from animals of another kind;</p> <p>(b) horned or fractious animals are kept apart from other animals; and</p> <p>(c) if two or more horned or fractious animals are kept together, they are so secured that they cannot injure one another.</p>	<p><u>HORNED OR FRACTIOUS ANIMALS</u></p> <p><u>Reg. 10</u> The occupier of a lairage shall ensure that within the lairage -</p> <p>(a) horned cattle and fractious animals are kept apart from other animals; and</p> <p>(b) if two or more horned cattle or fractious animals are kept together they are restrained so that they cannot injure one another.</p> <p>For the purposes of this regulation "fractious" means likely to injure other animals.</p>	<p><u>HORNED OR FRACTIOUS ANIMALS</u></p> <p>NO SPECIAL CONDITION</p>
<p><u>SUSPECT ISOLATION</u></p> <p><u>Reg. 14</u> The occupier of a slaughterhouse or knacker's yard shall ensure -</p> <p>(a) that any animal which is awaiting slaughter in the slaughterhouse or knacker's yard and which is in pain is slaughtered without delay;</p> <p>(b) that any animal which is confined in a lairage and which would suffer unnecessary pain if removed therefrom is slaughtered in the lairage;</p> <p>(c) that any sick or disabled animal awaiting slaughter in the slaughterhouse or knacker's yard is kept apart from other animals;</p> <p>(d) that any animal which is awaiting slaughter in the slaughterhouse or knacker's yard and which is too young to take swill or solid food is slaughtered as soon as practicable after its arrival there.</p>	<p><u>SUSPECT ISOLATION</u></p> <p><u>Reg. 18</u> The occupier of a slaughterhouse, knacker's yard or lairage, as the case may be shall cause -</p> <p>(a) any animal which is in pain on arrival or subsequently at the slaughterhouse, knacker's yard or lairage to be slaughtered without delay;</p> <p>(b) an animal, as far as practicable, to be slaughtered in the lairage if moving it therefrom causes it suffering;</p> <p>(c) any animal showing signs of illness or disability not necessitating immediate slaughter to be, as far as is practicable, isolated pending slaughter;</p> <p>(d) an animal too young to take swill or solid food to be slaughtered as soon as practicable after arrival.</p>	<p><u>SUSPECT ISOLATION</u></p> <p>E.E.C. DIRECTIVE ANNEX I, CHAPTER 1 cond:</p> <p>1(T) Premises which can be locked reserved for stabling sick or suspect animals,.....</p>
<p>The Food (Preparation and Distribution of Meat) (Scotland) Regulations 1963 No. 2001 (S108)</p> <p><u>Reg. 9</u> (1) Subject to the provisions of the Slaughter of Animals (Scotland) Acts 1928 to 1954 (a) and of any regulations made thereunder, the layout of, and arrangements for dealing with animals in, a lairage shall be such as to enable any animal confined therein which is suffering, or suspected to be suffering, from any disease to be segregated.</p>	<p><u>The Slaughterhouse (Hygiene) Regulations 1958 No. 2168</u></p> <p>Part IV</p> <p><u>Reg. 19(1)</u> No person shall bring or permit to be brought into a slaughterhouse any animal which he knows or suspects to be diseased unless he takes such animal or causes it to be taken to that part of the lairage provided for the segregation of such animals.</p> <p><u>Reg. 19A(2)</u> No person shall keep or permit to be kept in any lairage for a period exceeding 72 hours any animal intended for slaughter unless -</p> <p>(a) an authorised officer gives his consent in special circumstances that such animal may be kept in a lairage for a period exceeding 72 hours, and</p> <p>(b) such animal is kept in that part of the lairage provided for the segregation of animals which are diseased or suspected of being diseased, and separated from all other animals in respect of which no such consent has been given.</p>	

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<p><u>SEPARATION FROM SLAUGHTERHOUSE</u></p> <p>PART II</p> <p><u>Reg. 3.</u> The occupier of a slaughterhouse or knackers yard shall ensure—</p> <p>(d) that the slaughterhouse or knackers yard is so constructed that no animal in the lairage is able to see into the slaughterhall:</p> <p>(e) that the slaughterhouse or knackers yard is so constructed as to ensure that the blood of a slaughtered animal does not flow from the slaughterhall into the lairage.</p>	<p><u>SEPARATION FROM SLAUGHTERHOUSE</u></p> <p>PART IV</p> <p>General conditions to be observed in slaughterhouses and knackers yards</p> <p><u>Reg. 12</u> The occupier of a slaughterhouse or knacker's yard shall ensure that no blood or other refuse from a slaughterhall shall be deposited in or allowed to flow into any lairage, and shall ensure that so far as is practicable the blood and refuse shall be removed from the slaughterhouse or knackers yard in such a way that animals awaiting slaughter cannot see or smell such blood or refuse.</p>	<p><u>SEPARATION FROM SLAUGHTERHOUSE</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond: 1(1) An adequate separation between the clean and polluted section;</p>
<p><u>MOVEMENT OF ANIMALS</u></p> <p>PART IV</p> <p>Conditions to be observed in connection with the slaughter of animals</p> <p><u>Reg. 10(1)</u> Any person engaged in driving or bringing any animals to the place of slaughter or in handling an animal prior to slaughter shall adopt such methods and precautions as will prevent the infliction upon the animal of unnecessary suffering or pain.</p>	<p><u>MOVEMENT OF ANIMALS</u></p> <p><u>Reg. 13</u> Every person engaged in driving or bringing any animal to the place of slaughter shall -</p> <p>(a) avoid, so far as is practicable, driving or bringing an animal over any ground or floor the condition or nature of which is likely to cause the animal to slip or fall;</p> <p>(b) adopt such methods and precautions as will prevent the infliction upon the animal of unnecessary suffering or pain.</p>	<p><u>MOVEMENT OF ANIMALS</u></p> <p>NO SPECIAL CONDITION</p>
<p><u>SPECIAL PROVISION FOR HORSES</u></p> <p>PART VII</p> <p>Special provisions for horses</p> <p><u>Reg. 18.</u> The occupier of a slaughterhouse or knackers yard in which horses are slaughtered shall ensure -</p> <p>(a) that the lairage therein in which the horses are confined is divided into stalls by means of permanently fixed partitions so constructed as to minimise the danger of any horse injuring itself or any other animal confined within the said lairage;</p> <p>(b) that the said lairage contains at least one loose box;</p> <p>(c) that if the slaughterhouse or knackers yard is constructed or adapted for use as such after the date on which these regulations come into operation there is provided therein a separate room or bay to be used for the slaughter of horses and for no other purpose.</p> <p><u>Reg. 19(1)</u> Any person having for the time being the care of any horse within a slaughterhouse or knackers yard shall ensure that the horse is either kept in a loose box or securely tied up in a stall.</p> <p>(2) In any slaughterhouse or knackers yard no person shall -</p> <p>(a) keep more than one horse or two ponies or two foals in a loose box, or</p> <p>(b) keep more than one horse in a stall.</p> <p><u>Reg. 20.</u> No person shall in a slaughterhouse or knackers yard slaughter a horse in a room or bay in which there are any remains of a horse or other animal, or within the sight of any other horse. Provided that the provisions of this Regulation shall not apply in the case of a horse slaughtered in accordance with the provisions of paragraph (a) or paragraph (b) of Regulation 14 of these regulations.</p>	<p><u>SPECIAL PROVISION FOR HORSES</u></p> <p>PART VI</p> <p>Additional provisions for horses</p> <p><u>Reg. 24</u> The occupier of a lairage of a slaughterhouse or knackers yard used for the slaughter of horses shall cause such a lairage to be so constructed and situated in relation to the normal place of slaughter as to render it impossible for any horse in the lairage to see any horse being slaughtered.</p> <p><u>Reg. 25</u> The occupier of a lairage of a slaughterhouse or knackers yard in which horses are slaughtered shall cause such a lairage to be fitted with an adequate number of permanently fixed partitions and shall not cause or permit more than one horse to be laired between two consecutive partitions; and shall cause the lairage to contain not less than one loose box.</p> <p><u>Reg. 26</u> The occupier of such a lairage as aforesaid shall ensure that no horse shall be laired loose in any yard or place other than a field except that not more than one horse or two ponies or two foals may be kept loose in a suitable loose box.</p> <p><u>Reg. 27</u> No person shall slaughter a horse in any room or other place where there is a horse or any remains of a horse or of any other animal.</p>	<p><u>SPECIAL PROVISION FOR HORSES</u></p> <p>NO SPECIAL CONDITION</p>

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Extracts from The Food (Preparation and Distribution of Meat) (Scotland) Regulations 1963 unless noted 'POC' i.e. The Slaughter of Animals (Prevention of Cruelty) (Scotland) Regulations 1955	Extracts from The Slaughterhouses (Hygiene) Regulations 1958 as amended unless noted 'POC' i.e. The Slaughter of Animals (Prevention of Cruelty) Regulations 1958	Directive of the Council of 26th June 1964 on health problems concerning intra-community trade in fresh meat. (64/433/EEC) (as amended by 66/601;69/349 and 70/486).
<p><u>GENERAL</u></p> <p>Part III</p> <p><u>Reg. 10.</u> The layout, design and arrangement of a slaughterhouse shall be such as to enable the operations conducted in the slaughterhouse to be carried on under hygienic conditions and, in particular, to be carried on so as to avoid the risk of contaminating any meat which is in the slaughterhouse.</p> <p><u>Reg. 11.</u> Without prejudice to the generality of the last foregoing regulation, suitable and sufficient provision shall be made in every slaughterhouse -</p> <p>(a) for the hanging of carcases and sides of meat in such a manner as will -</p> <p>(i) permit air to circulate freely at all times around the carcases and sides of meat, and</p> <p>(ii) ensure that no part of any carcase or side of meat shall come into contact with the floor;</p>	<p><u>GENERAL</u></p> <p>Part II</p> <p><u>Reg. 3.</u> The slaughterhouse shall be arranged so as -</p> <p>(b) to permit the functioning of all operations under hygienic conditions.</p> <p><u>Reg. 5.</u> Every slaughterhouse shall contain -</p> <p>(a) suitable and sufficient space for the hanging of meat so as to allow air to circulate freely at all times between the carcases;</p> <p>Part IV</p> <p><u>Reg. 31.</u> The occupier of every slaughterhouse shall ensure that carcases in the hanging space are so hung as to allow air to circulate freely between them at all times.</p>	<p><u>GENERAL</u></p> <p>ANNEX I, CHAPTER I</p> <p><u>cond:</u></p> <p>1(b) Slaughtering premises of such a size that work can be carried out satisfactorily ;.....</p> <p>1(t) Arrangements so that,after slaughter, dressing can be carried out as far as possible, on the suspended animal, where skinning is carried out on metal cradles, they shall be of material resistant to corrosion and of a height such that the carcase does not touch the floor.</p> <p>1(u) A network of overhead rails for the subsequent handling of the meat;</p>
<p><u>SEPARATION</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>SEPARATION</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>SEPARATION</u></p> <p>ANNEX 1 CHAPTER 1.</p> <p><u>Cond: 1(l)</u></p> <p>An adequate separation between the clean and polluted section:</p>
<p><u>ACCESS</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>ACCESS</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>ACCESS</u></p> <p>ANNEX 1 CHAPTER 1</p> <p><u>Cond: 1(k)</u></p> <p>Means of checking access to and from the slaughterhouse;</p>
<p><u>VEHICLE WASHING</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>VEHICLE WASHING</u></p> <p>NO SPECIFIC REGULATION</p>	<p><u>VEHICLE WASHING</u></p> <p>ANNEX 1 CHAPTER 1</p> <p><u>Cond: 1(y)</u></p> <p>Space and arrangements for cleansing and disinfecting vehicles.</p>

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<p><u>STUNNING PENS</u></p> <p>'P.O.C.'. PART IV</p> <p>Reg. 10. (1) Any person engaged in driving or bringing any animal to the place of slaughter or in handling an animal prior to slaughter shall adopt such methods and precautions as will prevent the infliction upon the animal of unnecessary suffering or pain.</p> <p>(2) Without prejudice to the foregoing generality no person shall stun any bull, ox, bullock, cow, heifer or steer unless -</p> <p>(a) it is confined in a stunning pen, or</p> <p>(b) its head is securely fastened in such a position that it may be stunned with as little pain and suffering as possible.</p> <p>Reg. 11. Any person engaged in the slaughter of an animal shall ensure that the animal is killed immediately after it has been stunned.</p>	<p><u>STUNNING PENS</u></p> <p>'P.O.C.'. PART II</p> <p>Reg. 5. (1) This regulation shall apply as respects any existing slaughterhouse from such date as the Minister may by order under these regulations appoint, but otherwise shall apply forthwith.</p> <p>(2) Subject to the provisions of this regulation -</p> <p>(a) the occupier of every slaughterhouse in which any bull, ox, bullock, cow, heifer or steer is slaughtered otherwise than by a method referred to in regulation 17 hereof shall ensure that the slaughterhouse is at all times equipped with a sufficient number of stunning pens in good condition and proper working order;</p> <p>(b) no person shall stun any bull, ox, bullock, cow, heifer, or steer in any slaughterhouse unless at the time of stunning it is confined in a stunning pen:</p> <p>Reg. 15. (1) No person shall slaughter any animal in a slaughterhouse or knacker's yard in the sight of any other animal awaiting slaughter:</p> <p>(2) For the purposes of this regulation slaughter does not include stunning by means of electricity.</p> <p>Reg. 14. (1) Except where the animal is confined in a stunning pen, every person shall before proceeding to stun any bull, ox, bullock, cow, heifer, or steer cause the head of such animal to be securely fastened in such a position as to enable the animal to be stunned with as little pain and suffering as possible.</p>	<p><u>STUNNING PENS</u></p> <p>ANNEX 1 CHAPTER V</p> <p>Cond: 18</p> <p>Slaughter animals brought into slaughterhouses shall be slaughtered immediately.</p> <p>NO COMPARABLE E.E.C. CONDITION REQUIRING A STUNNING PEN</p>
<p><u>RITUAL PENS</u></p> <p>Reg. 13. No person shall slaughter any bull, ox, bullock, cow, heifer or steer by the Jewish or Mohammedan method without the use of a casting pen of the Weinberg or Dyne type or such other type as may be approved by the Secretary of State.</p>	<p><u>RITUAL PENS</u></p> <p>Reg. 17. No person shall slaughter any bull, ox, bullock, cow, heifer or steer by the Jewish or Mohammedan method without the use of a casting pen of the Weinberg, Dyne or North British Rotary type or such other type as may be approved by the Minister.</p>	<p><u>RITUAL PENS</u></p> <p>NO COMPARABLE CONDITION</p>
<p><u>STUNNING</u></p> <p>Reg. 12. No person shall -</p> <p>(a) use any instrument for slaughtering or stunning any animal unless his ability and physical condition qualify him to use such instrument without inflicting unnecessary pain on the animal, or</p> <p>(b) use a mechanically-operated instrument in such manner or in such circumstances as to give rise to the risk of causing unnecessary suffering to the animal.</p>	<p><u>STUNNING</u></p> <p>Reg. 14 (2) Every person shall in the process of slaughtering any animal use such instruments or appliances for the purpose and adopt such methods of slaughter and otherwise take such precautions as may be requisite to secure that as little pain and suffering as possible is inflicted.</p> <p>Reg. 16. No person shall use any instrument for slaughtering or stunning any animal unless his ability and physical condition at the time qualify him to use it without inflicting unnecessary pain on the animal nor shall he use a mechanically-operated instrument in such a manner or in such circumstances or in such need-of repair as to give rise to the risk of causing unnecessary suffering.</p>	<p><u>STUNNING</u></p> <p>NO COMPARABLE CONDITION</p>

SCOTLAND	ENGLAND AND WALES	EUROPEAN ECONOMIC COMMUNITY
<p><u>PIGS</u></p> <p>NO COMPARABLE REGULATION</p>	<p><u>PIGS</u></p> <p>NO COMPARABLE REGULATION</p>	<p><u>PIGS</u></p> <p>ANNEX 1 - CHAPTER 1</p> <p><u>cond: 1b</u></p> <p>'In slaughtering premises where both pigs and other breeds are slaughtered, a <u>special section</u> must be provided for slaughtering pigs; however, that special section shall not be mandatory if slaughtering of pigs and other animals takes place at <u>different times</u> but, in that case, the scalding, depilation, scraping and singeing operations must take place in special sections clearly separated from the slaughter line, either by an open space of at least 5 m or by a partition at least 3 m in height.'</p>
<p><u>INSPECTION</u></p> <p>PART III</p> <p><u>Reg. 11.</u> ... suitable and sufficient provision shall be made in every slaughterhouse -</p> <p>(g) for facilitating the inspection of meat for the purposes of the Food (Meat Inspection) (Scotland) Regulations 1961, and for making available accommodation and washing facilities for the use of persons carrying out such inspection.</p> <p>see also Food (Meat Inspection) (Scotland) Regulations 1961 No. 243 (S15)</p>	<p><u>INSPECTION</u></p> <p>PART II</p> <p><u>Reg. 3.</u> The slaughterhouse shall be arranged so as -</p> <p>(a) to provide adequate space and facilities for the efficient performance of meat inspection;</p> <p>PART IV</p> <p><u>Reg. 30.</u> Any person who slaughters or causes to be slaughtered any animal shall ensure that -</p> <p>(b) any offal intended for human consumption remains readily identifiable with the carcass from which it was removed until the carcass has been inspected or removed from the slaughterhouse;</p> <p>see also The Meat Inspection Regulations 1963 No. 1229</p>	<p><u>INSPECTION</u></p> <p>ANNEX 1 - CHAPTER 1</p> <p><u>cond: 1j</u></p> <p>"Arrangements so that the Veterinary inspection prescribed in the present Directive can be carried out efficiently at any time";</p> <p>ANNEX 1, CHAPTER V, <u>Cond. 21.</u></p> <p>"Evisceration should be carried out immediately, and concluded not later than half an hour after bleeding. The lungs, heart, liver, spleen and mediastinum may be detached or left attached to the carcass by their natural connections. If detached, they shall be numbered or identified by some means enabling them to be recognised as belonging to a given carcass; this also applies as regards the head, tongue, digestive tract and any other part of the animal required for inspection. The above mentioned parts shall remain near the carcass until the inspection is concluded. In the case of all species, the kidneys shall remain attached to the carcass by their natural connections, but removed from their fatty covering".</p> <p>see also Chapter VI clauses 27 to 30 inclusive.</p> <p><u>Cond: 23.</u> Carcases of solipeds, pigs over 4 weeks old and cattle over 3 months old shall be submitted for inspection cut into sides by a longitudinal split of the spinal column. In the case of pigs and solipeds, the head should also be split lengthwise. If necessary for the purposes of inspection, the official veterinarians may require the carcass of any animal to be split lengthwise.</p> <p><u>Cond: 24.</u> Until the conclusion of inspection, it is forbidden to cut up, remove or process any part of the slaughtered animal.</p> <p>CHAPTER VI</p> <p><u>Cond: 27.</u> All parts of the animal, including blood, shall be subject to inspection immediately after slaughter.</p>

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<p><u>BLOOD</u></p> <p>PART III</p> <p>Reg. 24. (1) Any receptacle used in a slaughterhouse for the reception or storage of blood intended for sale for human consumption and any receptacle used for the removal from a slaughterhouse of stomachs, intestines, or trimmings, shall have a closely fitting cover, and, when not in use, shall be kept covered.</p> <p>(2) Any receptacle used for the purpose of holding or storing blood intended for sale for human consumption shall not be used for any other purpose and shall bear such a mark as will clearly identify it as being available for that purpose only.</p> <p>Reg. 27. A person shall not immerse any part of his hands or arms in any blood intended for sale for human consumption.</p>	<p><u>BLOOD</u></p> <p>PART III</p> <p>Reg. 17. (3) Where receptacles are furnished for holding blood before removal from the slaughterhouse, such receptacles shall be provided with closely fitting covers.</p> <p>PART IV</p> <p>Reg. 22. (a) receptacles provided for holding blood intended for human consumption are clearly identified and used for no other purpose;</p> <p>Reg. 29. Any person who collects or causes to be collected any blood intended for human consumption shall place it or cause it to be placed in clean receptacles provided for that purpose and shall so keep such blood or cause it to be so kept as to be identifiable with the carcasses from which it was collected until such carcasses have been inspected or removed from the slaughterhouse.</p> <p>Reg. 30. Any person who slaughters or causes to be slaughtered any animal shall ensure that -</p> <p>(a) any blood which is not immediately swilled down a drain is collected in receptacles whether or not such blood is intended for human consumption;</p> <p>Reg. 39. No person shall -</p> <p>(c) when stirring any blood intended for human consumption permit his hand or other part of his person to come into contact with such blood;</p>	<p><u>BLOOD</u></p> <p>CHAPTER V. Cond: 19.</p> <p>Bleeding shall be complete; blood intended for human consumption shall be collected in perfectly clean receptacles. It must not be beaten by hand, but only with instruments which meet the requirements of hygiene.</p> <p>Cond: 26. If the blood of several animals is collected in the same receptacle, the whole content thereof shall be excluded from intra-Community trade if the meat of one of the animals concerned has been declared unfit for human consumption.</p> <p>Article 3</p> <p>Cond: 2e. Blood which has been chemically treated to prevent coagulation is not permitted for intra-Community trade.</p>
<p><u>HIDES AND SKINS</u></p> <p>PART III</p> <p>Reg. 33. (2) The hide or skin, hooves and horns (if severed from the head of the carcass) shall, after they have been separated from the carcass, be removed forthwith to the accommodation provided in accordance with regulation 11(e) of these regulations.</p> <p>PART II</p> <p>Reg. 11. ... suitable and sufficient provision shall be made in every slaughterhouse -</p> <p>(e) for the storage of hides, skins, hooves and horns (if severed from the head of the carcass) under cover elsewhere than in the slaughterhall or any part of the slaughterhouse in which meat is handled, hung or stored;</p>	<p><u>HIDES AND SKINS</u></p> <p>PART IV</p> <p>Reg. 33. The occupier of every slaughterhouse shall cause every hide or skin to be removed from any part of the slaughterhouse containing any meat or containing any blood intended for human consumption as soon as possible after it has been separated from the carcass.</p>	<p><u>HIDES AND SKINS</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>cond. 1(e) Separate premises for the storage of unrendered fats on the one hand and of hides, horns and hoofs on the other hand, in the event of such waste products not being removed from the slaughterhouse on the day of slaughtering.</p> <p>CHAPTER V, Cond: 25</p> <p>"Condemned or seized meat, stomachs, intestines, hides, skins, horns and hooves shall be placed as rapidly as possible in special premises".</p> <p>Cond: 20. With the exception of pigs, immediate and complete skinning shall be compulsory. When not skinned, pigs shall have their bristles removed immediately.</p>

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<p><u>VISCERA</u></p> <p>PART III</p> <p>Reg. 11. ... suitable and sufficient provision shall be made in every slaughterhouse:-</p> <p>(b) for the emptying and cleaning of stomachs and intestines in a part of the slaughterhouse other than the slaughterhall and any other part in which meat is handled, hung or stored;</p> <p>Reg. 33. (1) The stomachs and intestines shall, immediately after they have been separated from the carcase, be removed forthwith to the accommodation provided in accordance with regulation 11(b) of these regulations.</p>	<p><u>VISCERA</u></p> <p>PART II</p> <p>Reg. 5. (b) suitable and sufficient space apart from the slaughterhall and hanging space for the emptying and cleaning of stomachs and intestines;</p> <p>PART III</p> <p>Reg. 17. (4) where receptacles are furnished for the removal from the slaughterhouse of stomachs, intestines and trimmings they shall be suitable and sufficient for the purpose.</p> <p>PART IV</p> <p>Reg. 30. (c) the stomachs and intestines of slaughtered animals are removed from the slaughterhall unopened immediately after they have been separated from the carcase and that they are not opened or cleaned in any part of the premises which contains blood intended for human consumption or any meat other than stomachs or intestines.</p>	<p><u>VISCERA</u></p> <p>ANNEX 1 CHAPTER 1</p> <p>cond: 1(c) Premises for the emptying and cleansing of stomachs and intestines;</p> <p>cond: 1(d) Premises for dressing of guts and tripe;</p>
<p>REFUSE AND MANURE</p> <p>PART III</p> <p>Reg. 32. (1) Refuse, manure and other waste matter produced in the carrying on of a slaughterhouse business shall, if not immediately removed from the slaughterhouse, be placed either in receptacles having closely fitting covers provided for the purpose or in a dungstead provided in accordance with the provisions of regulation 16 of these regulations.</p> <p>(2) There shall be provided in a slaughterhouse such number of receptacles as will enable the provisions of this regulation to be complied with.</p> <p>Reg. 34. (1) No refuse, manure or other waste matter, whether solid or liquid, shall be allowed to accumulate in any part of a slaughterhouse, except in so far as compliance with the requirements of this paragraph would interfere with the efficient carrying on of business.</p> <p>(2) The contents of every dungstead, and the contents of every receptacle provided in accordance with regulation 32 of these regulations, shall be removed from the slaughterhouse at least once in every two days and, after the contents have been so removed, the dungstead or receptacle, as the case may be, shall be cleaned before being used again.</p>	<p>REFUSE AND MANURE</p> <p>PART III</p> <p>Reg. 17. (5) Suitable and sufficient receptacles furnished with closely fitting covers shall be provided for collecting and removing from every slaughterhouse all garbage, filth and refuse; provided that if such receptacles are insufficient for holding all manure, a manure bay shall be provided and maintained with impervious walls and floor and be drained to a suitable outlet.</p> <p>PART IV</p> <p>Reg. 22. (b) receptacles (other than manure bays) which contain blood, garbage, filth or refuse are kept covered with closely fitting covers;</p> <p>Reg. 25. (e) ensure that no garbage, filth or refuse whether solid or liquid is deposited or allowed to accumulate in a slaughterhouse except so far as may be unavoidable for the proper carrying on of the business therein;</p> <p>Reg. 42. The occupier of every slaughterhouse shall cause -</p> <p>(a) the contents of every receptacle or bay containing manure and every receptacle referred to in sub-paragraph (b) of regulation 22 hereof to be removed from the slaughterhouse as often as may be necessary to prevent a nuisance and in any event at least once in every two days and after the contents have been so removed he shall cause the receptacle or bay to be thoroughly cleansed before being used again;</p> <p>(b) by-products of slaughtering not intended for human consumption, including hides and skins, to be removed from the slaughterhouse as often as may be necessary to prevent a nuisance and in any event at least once in every two days.</p>	<p>REFUSE AND MANURE</p> <p>ANNEX 1 CHAPTER 1</p> <p>Cond: 1x A special section for manure.</p>

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<p><u>SANITARY SLAUGHTER AREA</u></p> <p>PART II</p> <p>Reg. 11. suitable and sufficient provision shall be made in every slaughterhouse -</p> <p>(c) for the isolation of meat awaiting inspection by a veterinary meat inspector;</p> <p>(d) for the retention, separate from all other meat, in locked accommodation of all meat subject to instructions by a veterinary meat inspector given by virtue of regulation 9 of the Food (Meat Inspection) (Scotland) Regulations 1961 or of meat which is unfit for human consumption;</p> <p>PART III</p> <p>Reg. 33. (3) No part of an animal slaughtered in a slaughterhouse, being a part which is not fit, or not intended for human consumption, shall be kept or stored in the slaughterhouse for a period longer than two days:</p> <p>Provided that this paragraph shall not apply to any such part as is retained in a slaughterhouse in refrigerated accommodation as material for teaching purposes or for disposal for the manufacture of therapeutic materials.</p>	<p><u>SANITARY SLAUGHTER AREA</u></p> <p>PART II</p> <p>Reg. 5. Every slaughterhouse shall contain -</p> <p>(c) suitable and sufficient facilities for the isolation of meat requiring further examination by the meat inspector;</p> <p>(d) suitable and sufficient accommodation for the retention, locked away from all other meat, of all meat rejected as being unfit for human consumption;</p> <p>PART IV</p> <p>Reg. 28. The occupier of every slaughterhouse shall cause any animals which are known or suspected to be diseased to be slaughtered and dressed either at a different time or in a different place from other animals.</p> <p>Reg. 32. The occupier of every slaughterhouse shall -</p> <p>(a) cause meat rejected as being unfit for human consumption to be removed as soon as possible to the accommodation provided for the retention of such meat; and</p> <p>(b) ensure that such accommodation is kept locked except when it is necessarily opened for the reception or removal of unfit meat or at the request of an authorised officer.</p>	<p><u>SANITARY SLAUGHTER AREA</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>cond: 1f. Premises which can be locked reserved for stabling sick or suspect animals, slaughtering such animals, storing of meat found to be unfit for human consumption and of seized meat.</p> <p>ANNEX 1, CHAPTER V.</p> <p>Cond: 25. Condemned or seized meat, shall be placed as rapidly as possible in special premises.</p>
<p><u>CLEANSING AND STERILIZATION</u></p> <p>PART III</p> <p>Reg. 20. (1) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, there shall be provided in every slaughterhouse suitable and sufficient wash-basins readily accessible to persons working there.</p> <p>(2) Every such wash-basin as aforesaid shall be used for the purpose of securing the personal cleanliness of the said persons and for no other purpose.</p> <p>(3) Every such wash-basin as aforesaid and any fittings or connections thereof shall be kept clean and in efficient working order.</p> <p>(4) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, there shall be provided at every such wash-basin as aforesaid adequate piped supplies of hot and cold water or an adequate piped supply of warm water at a controlled temperature.</p> <p>(5) At or near every such wash-basin as aforesaid there shall be provided for the use of the persons using the basin adequate supplies of soap or other suitable detergents, nail brushes and clean towels or other hygienic drying facilities and such soap, detergents, nail brushes and towels or other hygienic drying facilities shall be used only for the purpose of securing the personal cleanliness of these persons.</p> <p>/continued</p>	<p><u>CLEANSING AND STERILIZATION</u></p> <p>PART III</p> <p>Reg. 16. There shall be provided within every slaughterhouse, at places readily accessible to the workrooms and sanitary conveniences, suitable facilities for the washing of hands (including an adequate supply of hot and cold running water, nail brushes and sufficient supplies of soap or other detergent) by persons working in the slaughterhouse.</p> <p>Reg. 17. (2) Suitable and sufficient facilities shall be provided in convenient places within every slaughterhouse for the sterilisation of knives and other equipment used in the slaughterhouse.</p> <p>PART IV</p> <p>Reg. 22. The occupier of every slaughterhouse shall keep it or cause it to be kept in such a state of cleanliness and otherwise so conduct it as to prevent the risk of contamination of any meat therein or of any blood intended for human consumption, and in particular shall ensure that -</p> <p>(c) fixtures, fittings and equipment are kept clean;</p> <p>(d) scalding tanks are emptied and washed out as often as is reasonably necessary and thoroughly cleansed at the end of each working day.</p> <p>/continued</p>	<p><u>CLEANSING AND STERILIZATION</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>cond. 1s. "In working premises, adequate arrangements for cleansing and disinfecting hands and working equipment; such equipment must be as near as possible to the working stations; the taps must be incapable of being operated by hands; such installations must be supplied with running cold and hot water, cleansing and disinfection products and hand towels which can only be used once; for the cleansing of tools, water must have a temperature of not less than 82°C."</p> <p>CHAPTER III, Cond: 3</p> <p>"The most perfect cleanliness shall be required of staff and of premises and equipment:"</p> <p>Cond: 3</p> <p>(a) Staff who have been in contact with sick animals or infected meat shall immediately carefully wash the hands and arms with hot water, and then disinfect them. Staff assigned to the slaughtering of animals, working on or handling meat, shall be obliged to wash and disinfect their hands several times during the working day and each time work is resumed.</p> <p>(c) The equipment and instruments used for working on meat shall be carefully cleansed and disinfected several times during the working day and at the end of the day's work and before re-use after pollution, particularly by disease germs.</p> <p>/continued</p>

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<p><u>CLEANSING AND STERILIZATION</u> continued</p> <p>(6) Any towel provided in accordance with the foregoing provisions of this regulation shall be of a type intended for single use only and any such towel may -</p> <p>(a) be made of paper or similar material in which case it shall be disposed of immediately after use; or</p> <p>(b) consist of a roller towel controlled by a mechanical device which dispenses a clean section of the towel for each user, and any such mechanical device shall be maintained in efficient working order.</p> <p><u>Reg. 21.</u> (1) In a slaughterhouse suitable sinks or other facilities for washing equipment used for the purposes of the slaughterhouse business shall be provided and the facilities so provided shall be sufficient in number to enable all equipment, the cleaning of which is required by the provisions of these regulations, to be readily and thoroughly cleaned in accordance with those provisions.</p> <p>(2) At every such sink or other facility as aforesaid an adequate piped supply either of hot and cold water, or of warm water at a controlled temperature, shall be provided.</p> <p>(3) Every such sink and other facility as aforesaid shall be kept clean and in efficient working order.</p> <p>(4) There shall be provided for use at every such sink and other facility as aforesaid adequate supplies of soap or other suitable detergents and means of cleaning and drying equipment hygienically.</p> <p><u>Reg. 23.</u> Equipment in Slaughterhouses.</p> <p>(2) Any such equipment or fittings, other than receptacles and tanks, as aforesaid shall at the end of each working day be cleaned either -</p> <p>(a) with boiling water or steam, or</p> <p>(b) with hot water containing an efficient bactericidal agent in suitable quantity and thereafter rinsed with clean water.</p> <p>(3) Any such receptacle or tank as aforesaid shall, after each occasion on which it is used, be cleaned in one of the ways mentioned in the last foregoing paragraph and shall thereafter be kept clean until it is again used.</p> <p>(4) Suitable and sufficient facilities shall be provided in convenient places within every slaughterhouse for the sterilisation of equipment used in the slaughterhouse.</p> <p>(5) Any equipment or fittings including, without prejudice to the foregoing generality, any knife, scabbard, sharpening steel, chopper, saw or other similar utensil, used in a slaughterhouse shall, immediately after it has come into contact with any meat which is known or suspected to be diseased, be thoroughly cleaned in one of the ways mentioned in paragraph (2) of this regulation.</p>	<p><u>CLEANSING AND STERILIZATION</u> continued</p> <p><u>Reg. 25.</u> The occupier of every slaughterhouse shall -</p> <p>(a) cause the interior surfaces of slaughterhalls, hanging rooms, workrooms and any room used for the retention of meat rejected as being unfit for human consumption to be kept clean and in such condition as to prevent the absorption of any blood, refuse, filth or other offensive matter;</p> <p>(b) cause the floor and the walls in the slaughterhall up to a height of 6 feet from the floor, or higher if carcasses might come into contact with them, to be washed down frequently while slaughtering and dressing is taking place and thoroughly cleansed when slaughtering and dressing is completed for the day.</p> <p><u>Reg. 36.</u> Any person who engages in the handling of meat or the handling of blood intended for human consumption or who is liable to come into contact with meat or such blood in or about any slaughterhouse shall while so engaged or so liable -</p> <p>(a) keep as clean as may be reasonably practicable by thorough and frequent washing all parts of his person which are liable to come into contact with the meat or blood;</p> <p>(b) keep as clean as may be reasonably practicable all parts of his clothing, overclothing or overalls;</p> <p>(c) keep any sores, open cuts or abrasions on any exposed part of his person covered with a suitable waterproof dressing.</p> <p><u>Reg. 38.</u> Any person who has handled any meat or blood which he knows or suspects to be diseased shall immediately thereafter wash with hot water and soap or other detergent all parts of his person which may have come into contact with the meat or blood.</p> <p><u>Reg. 40.</u> Any person -</p> <p>(a) using any knife, scabbard, sharpening steel, chopper or saw in a slaughterhouse shall ensure that it is thoroughly cleansed and sterilised in boiling water or steam immediately after any contact with meat known or suspected to be diseased and in every case at the end of each working day;</p>	<p><u>CLEANSING AND STERILIZATION</u> continued</p> <p><u>Condi. 6.</u> The use of detergents, disinfectants, and pesticides must not affect the wholesomeness of the meat.</p>

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<p><u>CLEANSING AND STERILIZATION</u> continued</p> <p>Reg. 28. Any person who, or whose clothing, comes into contact in a slaughterhouse with any meat or blood which he knows to be, or suspects of being, diseased shall, immediately after contact with the meat or blood, wash such parts of his person as have come into contact therewith with hot water and soap or detergent and shall wash or change such parts of his clothing as have come into contact with any meat or blood as aforesaid immediately thereafter.</p> <p>Reg. 30. (1) The interior surfaces of the walls of a slaughterhouse shall be kept clean and in such a state of repair as to prevent the absorption by them of blood, refuse, dirt or other contaminating matter.</p> <p>(2) The floor and walls of the slaughterhall shall be washed down frequently each day to a height of 6 feet above floor level while slaughtering of animals and dressing of carcasses is taking place and shall be thoroughly cleaned each day up to that height when slaughtering and dressing are completed for the day:</p> <p>Provided that if meat is liable to come into contact with a part of a wall at a height greater than 6 feet from the floor that part shall also be washed and cleaned as aforesaid.</p>		
<p><u>EQUIPMENT</u></p> <p>PART III</p> <p>Reg. 23. (1) The equipment and fittings (including receptacles and tanks) in slaughterhalls and work rooms in a slaughterhouse with which meat comes, or is liable to come, into contact shall be made of such materials and so constructed and maintained as to -</p> <p>(a) enable them to be readily and thoroughly cleaned,</p> <p>(b) prevent, so far as is reasonably practicable, any matter being absorbed by them,</p> <p>(c) prevent, so far as is reasonably practicable, any risk of contamination of meat by such equipment or fittings,</p> <p>and, except for chopping blocks, cutting boards and brooms and the handles of implements, shall not be made of wood but shall be made of metal or other durable material resistant to corrosion.</p>	<p><u>EQUIPMENT</u></p> <p>PART III</p> <p>Reg. 17. (1) The equipment and fittings in slaughterhalls and workrooms shall be of such material and of such construction as to enable them to be kept clean and except for chopping blocks, cutting boards, brooms and the handles of implements shall not be of wood but shall be of metal or other durable material resistant to corrosion.</p>	<p><u>EQUIPMENT</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1w. Tools and materials, in particular containers, of material resistant to corrosion and easy to clean and disinfect;</p>
<p><u>BUILDING - VERMIN</u></p> <p>PART III</p> <p>Reg. 14. Every part of a slaughterhouse shall be so constructed as to prevent, so far as reasonably practicable, any risk of infestation by rats, mice or insects and the entry of birds.</p> <p>Reg. 31. All reasonable steps, in addition to such steps as are required to be taken by regulation 14 of these regulations, shall be taken to prevent the presence in or about the slaughterhouse of rats, mice, birds or insects.</p>	<p><u>BUILDING - VERMIN</u></p> <p>PART II</p> <p>Reg. 8. The rooms used for the preparation and storage of meat shall be constructed so as to prevent, as far as is reasonably practicable, any risk of infestation by rats, mice and insects and the entry of birds.</p> <p>Part III</p> <p>Reg. 27. The occupier of every slaughterhouse shall -</p> <p>(b) take all reasonable steps to keep the premises clear of rats, mice, birds and insects.</p>	<p><u>BUILDING - VERMIN</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1v. Appropriate arrangements for protection against intruding creatures such as insects, rodents, etc.</p>

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<p><u>BUILDING - FLOORS, WALLS AND ROOF</u></p> <p>PART III</p> <p>Reg. 13. (1) The interior walls of the slaughterhall and of all other parts of a slaughterhouse in which meat is handled, hung or stored shall be faced with smooth, hard, impervious material to a height of not less than 6 feet from the floor:</p> <p>Provided that if meat is liable to come into contact with a part of a wall at a height greater than 6 feet from the floor that part shall also be faced with smooth, hard, impervious material.</p> <p>(2) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, the ceiling, or, where there is no ceiling, the interior surface of the roof, and, subject to the provisions of the last foregoing paragraph, all other interior surfaces of all other parts of a slaughterhouse shall be so designed and constructed as to prevent, so far as possible, condensation of moisture, the growth of mould, and the accumulation of dirt thereon or the flaking of material therefrom.</p> <p>(3) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, the floors of all parts of a slaughterhouse used by animals or where meat is handled, hung or stored, or along which meat is transported, shall be composed of impervious non-slip material and all floors in a slaughterhouse shall be so constructed and maintained as to enable them to be thoroughly cleaned.</p> <p>(4) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, the floor of the slaughterhall and of any part of a slaughterhouse in which meat is handled, hung or stored shall be laid so as to have a fall of not less than 2 inches in every 10 feet.</p> <p>(5) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, the interior walls of the slaughterhall and of all other parts of a slaughterhouse in which meat is handled, hung or stored shall be coved at the junction with the floor.</p>	<p><u>BUILDING - FLOORS, WALLS AND ROOF</u></p> <p>PART II</p> <p>Reg. 9. The interior wall surfaces of any room provided for the purposes of regulation 5(d) and all workrooms, hanging rooms and slaughterhalls shall be faced with smooth hard impervious material up to a height of not less than 6 feet from the floor; except that where carcasses might come into contact with the wall at a level higher than 6 feet from the floor the facing shall be continued up to such higher level.</p> <p>Reg. 10. All ceilings and, where there are no ceilings, the interior surfaces of roofs and all interior surfaces not included in regulation 9 shall be so constructed and finished as to minimise condensation, mould development, flaking and the lodgment of dirt.</p> <p>Reg. 11. All floors in lairages, slaughterhalls, workrooms, hanging rooms and any rooms provided for the purpose of regulation 5(d) shall be of impervious non-slip material, constructed so as to enable them to be thoroughly cleaned; and floors in slaughterhalls and workrooms shall be laid so as to have a fall of not less than two inches in every ten feet.</p> <p><u>Reg. 12.</u></p> <p>Every slaughterhouse shall be so constructed and maintained as to prevent the deposit, flow or seepage of solids or liquids on to adjacent property.</p> <p>The Slaughter of Animals (Prevention of Cruelty) Regulations 1958 No. 2166</p> <p>Part II</p> <p>Reg. 4. The occupier of a slaughterhouse or knackers yard, as the case may be shall cause</p> <p>(a) the walls of the slaughterhall to be so constructed and the floor so channelled as to enable any blood and waste matter to be satisfactorily swilled away.</p>	<p><u>BUILDING - FLOORS, WALLS AND ROOF</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1m. Flooring of waterproof material, easy to cleanse and disinfect and rot-proof, sloping slightly, with an appropriate system for running off liquids to drains fitted with traps and gratings;</p> <p>- smooth walls, covered up to a height of at least 3 metres with light, washable paint, and with rounded angles and corners;</p>

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<p><u>WATER SUPPLY</u></p> <p>PART III</p> <p>Reg. 17. (1) A piped supply of wholesome water shall be provided in a slaughterhouse sufficient in quantity to enable the provisions of these regulations requiring the use of water to be complied with.</p> <p>(2) A supply of piped hot water shall be provided, and shall be available during working hours so as to be readily accessible for use, in every slaughterhall, in every part of the slaughterhouse in which meat is handled, and in any part in which washing facilities are provided for the personal use of persons employed in the slaughterhouse:</p> <p>Provided that this regulation shall not apply to those parts of a slaughterhouse in which carcasses and sides of meat are allowed to cool after slaughter or to cold stores.</p>	<p><u>WATER SUPPLY</u></p> <p>PART II</p> <p>Reg. 14. There shall be provided and maintained for use in connection with every slaughterhouse -</p> <p>(a) a sufficient, clean and wholesome supply of water available at an adequate pressure throughout the premises;</p> <p>(b) a sufficient clean and, where reasonably practicable, constant supply of hot water available in the slaughterhall and workrooms during working hours:</p> <p>provided that water which is not clean and wholesome shall be kept separate from other water supplied and shall be clearly identified as such.</p> <p>PART III</p> <p>Reg. 23. No person shall use in a slaughterhouse any water which is not clean and wholesome except for the purpose of fire precautions or the operation of refrigerators or steam boilers.</p>	<p><u>WATER SUPPLY</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1p. An installation which enables drinking water to be exclusively provided under pressure and in adequate quantities; however, the use of water other than drinking water is authorised exceptionally for the production of steam, where the pipes installed for this purpose do not permit this water to be used for other purposes; exceptionally, in addition, the use of water other than drinking water may be authorised for the cooling of refrigeration equipment. In this case, non-drinking water pipes must be painted red and must not pass through rooms where meat is located;</p> <p>Cond. 1q. Arrangements for the provision of sufficient quantities of hot drinking water:</p> <p>Chapter III</p> <p>Cond. 7. The use of drinking water is obligatory for all purposes; exceptionally, however, the use of water other than drinking water for the production of steam shall be authorised where pipes installed for this purpose do not permit such water to be used for other purposes. Exceptionally, in addition, the use of water other than drinking water may be authorised for the cooling of refrigeration equipment. Non-drinking water pipes must be painted red and must not pass through rooms where there is meat;</p>
<p><u>DRAINS</u></p> <p>PART III</p> <p>Reg. 18. (1) A slaughterhouse shall be provided with such a drainage system, including soil, waste and ventilation pipes, grease traps and intercepting chambers, as is necessary for the adequate disposal of soil and waste water from the slaughterhouse and from any dungstead, forecourt or yard used in connection therewith, and the system shall be kept in such a state of repair as will enable the pipes, traps and other parts to be readily and effectively cleaned.</p> <p>(2) Soil and waste water from a slaughterhouse or from a dungstead, forecourt or yard used in connection therewith shall not be disposed of otherwise than through such a drainage system as is provided in accordance with this regulation.</p>	<p><u>DRAINS</u></p> <p>PART II</p> <p>Reg. 13. There shall be provided in and in connection with every slaughterhouse satisfactory drainage, with traps for solids, which shall be maintained in proper working order.</p>	<p><u>DRAINS</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1r. Arrangements for draining off residual water in accordance with hygienic requirements.</p>

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<p><u>LIGHTING AND VENTILATION</u></p> <p>PART III</p> <p>Reg. 12. All parts of a slaughterhouse shall be provided with means of lighting and ventilation adequate for enabling the slaughter of animals, the dressing of carcasses and other processes connected with the preparation of meat for human consumption to be carried on efficiently.</p>	<p><u>LIGHTING AND VENTILATION</u></p> <p>PART II</p> <p>Reg. 6. (1) Every slaughterhouse shall, where reasonably practicable, be so constructed that meat inspection may be carried out by daylight.</p> <p>(2) Every slaughterhouse shall be provided with well distributed artificial light of an overall intensity of not less than 20 foot-candles throughout the slaughterhall and workrooms, provided that, at places where meat inspection is carried out, the overall intensity of artificial light shall not be less than 50 foot-candles.</p> <p>Reg.7. Every slaughterhouse shall be provided with suitable and sufficient means of ventilation to the external air, except in the case of a humidity-controlled or temperature-controlled chamber.</p> <p>PART IV</p> <p>Reg. 25. (f) ensure that the slaughterhouse is at all times when in use adequately lighted and where artificial lighting is employed that it is well distributed and of an overall intensity of not less than 20 foot-candles throughout the slaughterhall and workrooms, except that at places where meat inspection is carried out the overall intensity of the artificial light shall not be less than 50 foot-candles;</p> <p>(g) ensure that the slaughterhouse is at all times adequately ventilated.</p> <p>The Slaughter of Animals (Prevention of Cruelty) Regulations 1958</p> <p>Part II</p> <p>Reg. 4. The occupier of a slaughterhouse or knackers yard, as the case may be shall cause -</p> <p>(b) the slaughterhall to be adequately lighted for the proper conduct of all operations therein and to enable these regulations to be complied with.</p>	<p><u>LIGHTING AND VENTILATION</u></p> <p>ANNEX 1, CHAPTER 1</p> <p>Cond. 1o. In premises, where meat is dressed and handled, adequate natural or artificial lighting, which does not distort colours.</p> <p>Cond. 1n. Adequate ventilation and vapour extraction in premises where meat is dressed and handled.</p>
<p><u>REFRIGERATION</u></p> <p>NO COMPARABLE REGULATION</p>	<p><u>REFRIGERATION</u></p> <p>NO COMPARABLE REGULATION</p>	<p><u>REFRIGERATION</u></p> <p>ANNEX 1 CHAPTER 1</p> <p>Cond: 1(g) Adequate refrigeration rooms.</p> <p>Chapter XII.</p> <p>Cond: 49. Fresh meat for intra-Community trade shall be chilled immediately after the <u>post mortem</u> inspection and kept permanently at an internal temperature lower or equal to +7°C for carcasses and joints, and at +3°C for offal.</p>
<p><u>VETERINARY OFFICE</u></p> <p>Reg. 11.suitable and sufficient provision shall be made in every slaughterhouse."</p> <p>(g) for making available accommodation and washing facilities for the use of persons carrying out such inspection.</p>	<p><u>VETERINARY OFFICE</u></p> <p>NO COMPARABLE REGULATION</p>	<p><u>VETERINARY OFFICE</u></p> <p>ANNEX 1 CHAPTER 1</p> <p>Cond: 1(h) Suitable quarters which can be locked, for the exclusive use of the veterinary service; a room equipped for carrying out a trichinoscopic test, when such a test is compulsory.</p>

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<p><u>CLOAKROOMS AND TOILETS</u></p> <p>PART II</p> <p>Reg. 11. suitable and sufficient provision shall be made in every slaughterhouse -</p> <p>(f) for enabling persons employed in the slaughterhouse to change their clothing and footwear and to keep clothing and footwear not worn by them in the slaughterhouse in adequate and suitable accommodation provided for the purpose, such accommodation not being in the slaughterhall or any part of the slaughterhouse where meat is handled, hung or stored;</p> <p>Reg. 19. (1) Every sanitary convenience in, or used in connection with, a slaughterhouse shall be supplied with water through a suitable flushing apparatus and shall be kept clean and in efficient working order.</p> <p>(2) Every room or compartment in which there is a sanitary convenience to which this regulation applies shall be adequately lighted and ventilated and shall be kept clean and in good repair.</p> <p>(3) Save in a case in which a certificate of exemption has been granted under regulation 68 of these regulations, no room or compartment containing such a sanitary convenience as aforesaid shall communicate directly with the slaughterhall or with any part of the slaughterhouse where meat is handled, hung or stored.</p> <p>(4) A notice requiring users to wash their hands after using the convenience shall be prominently displayed at or near every such sanitary convenience as aforesaid.</p>	<p><u>CLOAKROOMS AND TOILETS</u></p> <p>PART II</p> <p>Reg. 5. Every slaughterhouse shall contain:-</p> <p>(e) suitable and sufficient accommodation, not being any part of the premises containing meat, where persons working in the slaughterhouse may change their clothes.</p> <p>Reg. 15. Every sanitary convenience in a slaughterhouse shall be supplied with water by means of a suitable flushing appliance and shall not communicate directly with the slaughterhall, workrooms or hanging rooms or any room provided for the purpose of regulation 5 (d) hereof.</p> <p>PART IV</p> <p>Reg. 25. The occupier of every slaughterhouse shall:-</p> <p>(c) cause every sanitary convenience in the slaughterhouse and the room in which it is situated to be kept clean and every such sanitary convenience to be maintained in efficient working order.</p> <p>(d) cause a clearly legible notice requesting users to wash their hands after using the convenience to be affixed and maintained in a prominent position near every sanitary convenience.</p> <p>Reg. 41. Every person coming to a slaughterhouse from a knacker's yard shall before handling any meat intended for human consumption or blood intended for human consumption thoroughly wash all parts of his person that may come into contact with such meat or blood and change into clean protective clothing as provided by regulation 35 hereof.</p>	<p><u>CLOAKROOMS AND TOILETS</u></p> <p>ANNEX 1 CHAPTER 1</p> <p>Cond: 1(i) Cloakrooms, wash basins and showers, water closets, the latter not opening directly onto the working premises; the wash basins must be provided with hot and cold water, arrangements for cleansing and disinfecting the hands, and hand towels for use once only; the wash basins must be adjacent to the water closets;</p>
<p><u>CLOTHING</u></p> <p>PART II</p> <p>Reg. 6. A person engaged in the handling of any meat -</p> <p>(b) shall wear clean overalls of washable material, a clean cover of washable material over his head and neck and, in the case of a person engaged in the handling of meat in a slaughterhouse, or, while meat is, before transportation, being loaded on to or placed in a meat lorry, meat compartment, meat container or receptacle at a slaughterhouse, clean boots of rubber or other material affording similar protection and such overalls, cover and boots shall be kept as clean as the process or operation in which the person wearing them is engaged renders reasonably practicable.</p>	<p><u>CLOTHING</u></p> <p>Reg. 35. Any person while engaged in or about any slaughterhouse in the handling of meat or the handling of blood intended for human consumption shall wear overalls or other suitable protective clothing including head covering and boots all of which articles shall be washable and be kept as clean as is reasonably practicable.</p>	<p><u>CLOTHING</u></p> <p>ANNEX 1 CHAPTER III</p> <p>Cond: 3(a) Staff shall in particular wear clothes and appropriate headgear with, where necessary, protection for the back of the neck</p>

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<p><u>GENERAL HYGIENE</u></p> <p>PART III</p> <p>Reg. 29. No person shall bring into, or permit to be brought into, or to remain in, a slaughterhouse any domestic bird or any animal other than an animal which is to be slaughtered.</p> <p>PART II</p> <p>Reg. 6. A person engaged in the handling of any meat</p> <p>(a) shall wash his hands on each occasion on which he has used a sanitary convenience, shall not smoke, chew tobacco, spit or take snuff and shall keep covered with a waterproof dressing any area of skin on any exposed part of his person which has been damaged by cutting, incision, contusion or in any other way.</p>	<p><u>GENERAL HYGIENE</u></p> <p>PART IV</p> <p>Reg. 21. No person shall bring into, or permit to be brought into or remain in a slaughterhouse any animal (other than a working dog or horse) or domestic bird not intended for slaughter for human consumption; and no person shall bring any working dog into or permit any such dog to be brought into or remain in any part of the slaughterhouse used for the dressing of carcasses or the preparation or storage of meat or for the keeping of blood intended for human consumption.</p> <p>Reg. 24. No person shall bring into or keep in any part of a slaughterhouse containing meat any article liable to prejudice the maintenance of hygiene or the proper performance of the functions reserved to that part of the slaughterhouse.</p> <p>Reg. 37. No person shall use tobacco (including snuff) in any part of a slaughterhouse containing meat or blood or while he is handling any meat or blood.</p> <p>Reg. 39. No person shall -</p> <p>(a) change his clothes in any part of the slaughterhouse containing meat;</p> <p>(b) urinate, defecate or spit in a slaughterhouse except in a sanitary convenience;</p> <p>(e) use in a slaughterhouse any knife, scabbard, sharpening steel, chopper or saw that has been used in a knacker's yard.</p> <p>Hygiene of premises and equipment</p> <p>Reg. 22. The occupier of every slaughterhouse shall keep it or cause it to be kept in such a state of cleanliness and otherwise so conduct it as to prevent the risk of contamination of any meat therein or of any blood intended for human consumption.</p> <p>Reg. 26. No person shall take any meat or blood into a room or other place which contains a sanitary convenience.</p>	<p><u>GENERAL HYGIENE</u></p> <p>ANNEX 1, CHAPTER III</p> <p>Cond. 3b. Dogs, cats and poultry shall be prohibited from entering slaughterhouses and cutting rooms. The destruction of rodents, insects and other vermin shall be carried out systematically.</p> <p>Cond. 8. The spreading of sawdust or any other like matter on the floor of rooms referred to in No.1(b), (c), (d), (e), (g) and No.2(a), (b) and (c) shall be prohibited;</p> <p>Cond. 4. The premises, tools and working equipment shall not be used for purposes other than working on meat. Tools for cutting shall be used for this purpose only.</p> <p>Cond. 5. Meat and receptacles which contain it shall not come into contact with the floor.</p>
<p><u>BLOWING OF CARCASSES</u></p> <p>PART III</p> <p>Reg. 35. In any case in which a carcass is blown, that is to say any case in which a layer of air is introduced between the hide or skin and the flesh of a dead animal, the following provisions of this regulation shall be complied with -</p> <p>(a) before the blowing is begun the carcass shall have been inspected by a meat inspector for evidence of abnormality which is obtainable on visual or manual examination alone;</p> <p>(b) the blowing shall not be carried out otherwise than by means of a mechanical apparatus supplying clean compressed air and operated by a person authorised for the purpose by the local authority;</p> <p>(c) the nozzle of the apparatus shall be thoroughly cleaned after each occasion on which it is used and it, and the remainder of the apparatus, shall be kept clean.</p>	<p><u>BLOWING OF CARCASSES</u></p> <p>PART IV</p> <p>Reg. 39. No person shall -</p> <p>(d) blow or inflate with his breath, or in any other manner likely to cause infection or contamination, the carcass of any animal intended for human consumption;</p>	<p><u>BLOWING OF CARCASSES</u></p> <p>ANNEX 1, CHAPTER V</p> <p>Cond. 22. Cleansing of meat with cloth, and blowing are prohibited. Nevertheless, the blowing up of an organ when this is imposed by a religious rite may be authorised, but the blown up organ must be withdrawn from human consumption.</p>

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<p><u>WIPING CLOTHS</u></p> <p>PART II</p> <p>Reg. 25 (2) no person shall use a cloth for wiping or cleaning meat in a slaughterhouse.</p>	<p><u>WIPING CLOTHS</u></p> <p>The Slaughterhouses (Hygiene) (Amendment) Regulations 1966 No. 1318</p> <p>Reg. 40A. No person shall use in a slaughterhouse any wiping cloth for the purpose of wiping down any carcass or any offal.</p>	<p><u>WIPING CLOTHS</u></p> <p>ANNEX 1 CHAPTER V</p> <p>Cond: 22. Cleansing of meat with cloth, and blowing are prohibited.</p>
<p><u>PROHIBITED HUMAN DISEASES</u></p> <p>PART II</p> <p>Notification of certain diseases.</p> <p>Reg. 7. (1) Upon any person engaged in the handling of any meat becoming aware that he is suffering from or is a carrier of, typhoid fever, paratyphoid fever or any other salmonella infection, or dysentery or other feverish disease or any staphylococcal or other infection likely to cause food poisoning, he shall forthwith give notice to the person having the management and control of the business for the purpose of which he is so engaged, and the person to whom any such notice is given as aforesaid, shall, upon receiving the notice, forthwith notify the Medical Officer of Health for the area accordingly and shall furnish the Medical Officer of Health with any information reasonably required by him.</p> <p>(2) Where the person having the management or control of any slaughterhouse or meat market becomes aware that he is himself suffering from any such condition or disease as is mentioned in the last foregoing paragraph he shall forthwith notify the Medical Officer of Health for the area and shall furnish the Medical Officer of Health with any information reasonably required by him.</p> <p>(3) There shall be prominently displayed in every slaughterhouse and meat market a notice, in such terms as the Secretary of State may approve, directing attention to the provisions of the foregoing paragraphs of this regulation requiring notice to be given of the matters mentioned therein and requiring any person to whom any of those requirements applies to give notice in accordance with that requirement.</p>	<p><u>PROHIBITED HUMAN DISEASES</u></p> <p>PART IV</p> <p>Reg. 34. (1) Subject to the provisions of this regulation, as soon as any person engaged in or about any slaughterhouse in the handling of meat or the handling of blood intended for human consumption becomes aware that he is suffering from, or is the carrier of, typhoid fever, paratyphoid fever or any other salmonella infection, or dysentery, or any staphylococcal infection likely to cause food poisoning, he shall forthwith give notice of the fact to the occupier or person in charge of the slaughterhouse and such occupier or person in charge, as the case may be, shall immediately after the receipt of the notice, notify the medical officer of health of the district in which the slaughterhouse is situated to the same effect.</p> <p>(2) Where the person required to give the notice referred to in paragraph (1) of this regulation is himself the occupier or person in charge of the slaughterhouse he shall immediately notify the medical officer of health of the district in which the slaughterhouse is situated.</p>	<p><u>PROHIBITED HUMAN DISEASES</u></p> <p>ANNEX 1 CHAPTER III</p> <p>Cond: 12. Person likely to contaminate meat shall be prohibited from work on it and handling of it, in particular persons:</p> <p>(a) suffering from or suspected of suffering from Typhoid Fever, Paratyphoid A and B, infectious enteritis (salmonella), dysentery; infectious hepatitis, scarlet fever, or carriers or agents for these diseases;</p> <p>(b) suffering from or suspected of suffering from contagious tuberculosis;</p> <p>(c) suffering from or suspected of suffering from a contagious skin disease;</p> <p>(d) carrying on simultaneously an activity through which microbes are likely to be transmitted to meat.</p> <p>(e) wearing a bandage on the hands, except for an impervious bandage protecting a non-infected wound on the finger.</p>
<p><u>MEDICAL CERTIFICATE</u></p> <p>NO SPECIFIC DEMAND</p>	<p><u>MEDICAL CERTIFICATE</u></p> <p>NO SPECIFIC DEMAND</p>	<p><u>MEDICAL CERTIFICATE</u></p> <p>ANNEX 1 CHAPTER III</p> <p>Cond: 13. A medical certificate shall be required from any person working with meat. It shall state that there is nothing to prohibit such work; it shall be renewed every year and each time the veterinary officer so requests; it shall be kept available for the latter.</p>



